



Leppert Associates

1422 Washington Avenue
Golden, Colorado 80401
Phone: (303)-216-2428
Fax: (303)-216-419

December 4, 2019

Clifford Ng
United States Environmental Protection Agency
Region II
290 Broadway, 22nd Floor
New York, NY 10007-1866

Re: Analytical Results of PFAS Screening Event at Bridgeport Disposal LLC

Dear Mr. Ng,

On behalf of Clean Harbors Bridgeport Disposal LLC (CHBD), Leppert Associates (LA) is providing this summary of the analytical results for samples collected for PFAS screening at the Bridgeport Disposal facility located at 2858 Route 322 in Bridgeport, New Jersey. The PFAS screening event was conducted on July 11, 2019 by personnel from both LA and Eurofins TestAmerica Marlton, NJ Field Services. Sample collection followed the protocols as established in the Sampling and Analysis Plan (SAP) that was prepared for the PFAS Screening Event. The original SAP document was submitted to the USEPA and NJDEP on November 1, 2018. Comments on the SAP were received from these agencies on April 5, 2019. A revised SAP incorporating responses to the comments was submitted by CHBD on May 2, 2019, which finalized the SAP. This SAP provided a detailed description of the PFAS screening sampling program and addressed the unique challenges of potential significant cross-contamination issues associated with PFAS sample collection. Sampling and analysis was conducted consistent with the *NJDEP Field Sampling Procedures Manual* (August 2005) and the *USEPA Field Equipment Cleaning and Decontamination* (December 2011).

During the PFAS screening event, eleven (11) water samples and five (5) soil samples were collected. Water samples were collected from the following seven (7) locations: one (1) abatement well: Well 22D; four (4) groundwater monitoring wells: Well MW-4-a, Well 4-b, Well 17-a and Well 88-5-WT; and two (2) samples associated with the onsite waste water treatment plant (WWTP). One of the WWTP samples was collected from the inflow sampling port on the manifold of the air stripper (influent sample), and the other was collected from a sampling port on the NJPDES discharge pipe coming from the WWTP discharge tanks (effluent sample). In addition, there were four (4) QA/QC samples obtained: one duplicate sample collected from Well MW-4-a which

was labeled MW-14-A, and three blank water samples: EB-2, EB-3 and FB-2. The seven water sampling locations for the PFAS screening event are indicated on Figure 1: *Water Sample Locations*:

Five (5) soil samples were collected from depths that ranged from 6.0 to 14.0 inches below surface. The soil samples were obtained from near soil sample locations previously surveyed and determined to have other impacts during historical soil sampling events at the site. Prior to sample collection, the soil sample locations were surveyed by a professional surveyor from Vargo Associates of Franklinville, NJ. Some soil sample locations were adjusted slightly once in the field in order to ensure that the soil samples were collected from locations with no cover such as asphalt or concrete, in order to prevent potentially compromising the sample by having to use equipment that would first need to penetrate a capped surface. The locations of these samples, identified as PFAS-SS-001, PFAS-SS-002, PFAS-SS-003, and PFAS-SS-004, are indicated on Figure 2: *Soil Sample Locations*. One duplicate sample, labeled PFAS-SS-010, was collected from the PFAS-SS-001 location.

After collection, samples were packed with ice in coolers to maintain correct temperatures. The coolers remained with the field personnel until they were relinquished for delivery to the laboratory, and ice was replenished as needed. The Eurofins TestAmerica Marlton, NJ Field Services technician that assisted with the sample collection took the coolers back with him to the Eurofins TestAmerica Marlton, New Jersey location. From there, the coolers were shipped via overnight delivery to the Eurofins TestAmerica West Sacramento, CA laboratory. All coolers were sealed with tape and custody seals and transportation of the samples was tracked in accordance with chain-of-custody (COC) and SAP procedures. The COCs and sample receipt form located in the back of the analytical report indicates that samples were labeled, packed, shipped, and received without any procedural discrepancies. The analytical report is provided as Appendix A: *Laboratory Analytical Results*.

As stated in the *Field Sampling Procedure Manual* (NJDEP, 2005), specifically in Section 6.9.2.2.4 *Laboratory Certification*, the New Jersey Administrative Code (NJAC 7:18) requires that any environmental laboratory or consulting firm submitting analytical data to the Department, regardless of quality level, must be certified by the Office of Quality Assurance. The analytical laboratory selected to conduct analyses for this event, Eurofins Test America West Sacramento, CA, is certified by the State of New Jersey to analyze the PFAS New Jersey list of 14 analytes. In addition, the lab was also chosen as they demonstrated capability to analyze for contaminants closely related to PFAS, including Hexafluoropropylene oxide dimer acid (HFPO DA), which is associated with GenX technology.

USEPA Method 537, Version 1.1 contains specific requirements for drinking water analysis of PFAS constituents, including sample preservation, shipping, storage, and holding times, which were considered applicable for the groundwater sampling work. Currently, there is no USEPA guidance or analytical method for other sample media. For all other matrices such as groundwater, soil and sediment, a modified Method 537 using

isotope dilution has been developed and is commonly used and widely accepted. The constituents as analyzed by the modified Method 537 for this event are listed in Table 1: *Revised PFAS Constituents List*. This list is comprised of the PFAS Standard List (21 analytes) and the PFAS New Jersey List (14 analytes). In addition, four (4) emergent contaminants closely related to PFAS, including Hexafluoropropylene oxide dimer acid (HFPO DA), which is associated with GenX technology, were included as analytes. Per the modified Method 537, water samples were analyzed at nanograms per liter (ng/L) (parts per trillion) and soil samples were analyzed at micrograms per kilogram ($\mu\text{g}/\text{kg}$) (parts per billion). As presented in the laboratory analytical report, the results of the analysis indicate the presence of PFAS in all the samples submitted. Detected PFAS constituents are presented in Table 2: *Summary of Detected PFAS Constituents in Water Samples* and Table 3: *Summary of Detected PFAS Constituents in Soil Samples*.

A Tier 1 data validation process was conducted to evaluate the laboratory results, and is presented in Appendix B: *Data Validation*. Data validation is a standardized process for judging the analytical quality and usefulness of a discrete set of chemical data. The validation process focuses on evaluating the analytical laboratory's performance with the data that is presented. The data validation concluded that the analytical quality and usefulness of the data collected and analyzed for the PFAS screening event was acceptable.

As indicated in Table 2, the number PFAS constituents and their concentrations varied, with more detections in the samples collected from the seven (7) water locations. The three (3) blanks samples – EB-2, EB-3 and EB-4 – each had similar detections of one constituent, Perfluorohexanesulfonic Acid (PFHxS), at below the reporting limit of 1.8 ng/L. Fewer constituents were detected in the soil samples as presented in Table 3, which were analyzed at a higher reporting limit.

As PFAS compounds are emerging contaminants, regulatory guidance and limits for most of these constituents are in the development phase. The *Site Remediation and Waste Management Program* of the New Jersey Department of Environmental Protection (NJDEP) updated the guidance for implementation of the interim specific ground water quality drinking water standards established for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), both at 10 ng/L, which became effective on March 13, 2019, the same day they were posted to the Division of Water Monitoring and Standards website (<https://nj.gov/dep/wms/bears/gwqs.htm>). These were listed on the website under the *Table of Interim Specific Ground Water Quality Criteria (ISGWQC)*, *Interim PQLs (IPQLs)*, and *Interim Specific Ground Water Quality Standards (ISGWQS) for Constituents in Class II-A Ground Water*. The constituent Perfluorononanoic Acid (PFNA) was already listed at a standard of 13 ng/L on the website's *Appendix Table 1: Specific Ground Water Quality Criteria, PQLs and Constituent Standards for Class II Ground Water*.

The results of the Bridgeport groundwater samples and WWTP samples were compared to the groundwater constituent standards for drinking water established for the three (3) PFAS parameters. The water samples collected from the seven (7) locations exceeded the limits of these three (3) constituents, as indicated on Table 2. The influent and effluent water samples are compared to the groundwater drinking water standard to allow a relative comparison, as they are comprised of primarily groundwater, although there are currently no standards for surface water discharge in New Jersey at this time. As there are no constituent standards developed for soil analysis, a comparison could not be conducted for the soil samples. Groundwater and WWTP sample detections of the three (3) PFAS constituents with standards – PFOA, PFOS and PFNA – were plotted to show relative percentages, as displayed in Figure 3: *Tri-linear Diagram of Sampling Results*. Among these three constituents, note that the majority of the groundwater samples are dominated by higher concentrations of PFOA, with one monitoring well, 4-b, showing relatively more PFOS.

The groundwater concentration results are highest in wells more centrally located on the site with the highest concentrations of volatile organic compounds (VOCs) as reported in the site semiannual monitoring reports. Water Table Well 17-a reported the highest PFAS concentrations, and Intermediate Unit abatement Well 22D, which currently yields most of the contaminant mass (VOCs) removed by the groundwater pumping system, also reported elevated values. It is notable that the well that is considered the most down-gradient well, Well MW-4-a, shows the lowest PFAS constituent values, and that background concentrations, such as from upgradient of the site, has not been determined.

For the effluent and influent water samples collected, similar concentrations of the three PFAS constituents were demonstrated, as follows: for the Influent sample, PFNA at 59 ng/L, PFOS at 76 ng/L and PFOA at 1,500 ng/L; and for the Effluent sample, PFNA at 59 ng/L, PFOS at 79 ng/L, and PFOA at 1,400 ng/L. The groundwater treatment currently utilized does not show a significant effect on the PFAS concentrations. It is notable that additional treatment, including filtration of pumped water at Well 22D, is being installed to help lower PCB discharge concentrations. This additional treatment system is expected to be on-line by the first quarter of 2020.

The soil sample PFAS results shown on Table 3 are less consistent than the groundwater samples. Although the higher detection limits is a factor, some of the soil samples showed PFOA and no PFOS, whereas others showed more PFOS. There were some detections in every soil sample, but soil sample PFAS-SS-02 from the central area of the site showed the highest concentrations of most PFAS compounds by an order of magnitude.

As per the guidance presented in the *Site Remediation and Waste Management Program Implementation of March 13, 2019, Interim Specific Ground Water Quality Standards, (ver. May 23, 2019)*: “If the evaluation/preliminary assessment indicates that PFOA and/or PFOS is/are contaminants of concern, then the

person responsible for conducting the remediation is required to conduct a site investigation for groundwater pursuant to N.J.A.C. 7:26E-3.3.”

The results of the PFAS screening event indicates that some of the wells at the CHBD facility demonstrate the presence of PFAS constituents above their respective groundwater quality drinking water standards, as established by the State of New Jersey. In response, Clean Harbors will be submitting a work plan in the near future to conduct a site investigation of groundwater for PFOA, PFOS and PFNA constituents.

Please contact me at 303-216-2428 or Frank Helpa at 856-467-7420 if you have any questions.

Sincerely,

Shawn Leppert
Leppert Associates

Cc: Anthony Cinque, NJDEP
Geoff Jones, Clean Harbors Environmental Service
Frank Helpa, Clean Harbors Bridgeport Disposal, LLC

Attachments:

Figure 1: *Water Sample Locations*

Figure 2: *Soil Sample Locations*

Figure 3: *Tri-linear Diagram of Sampling Results*

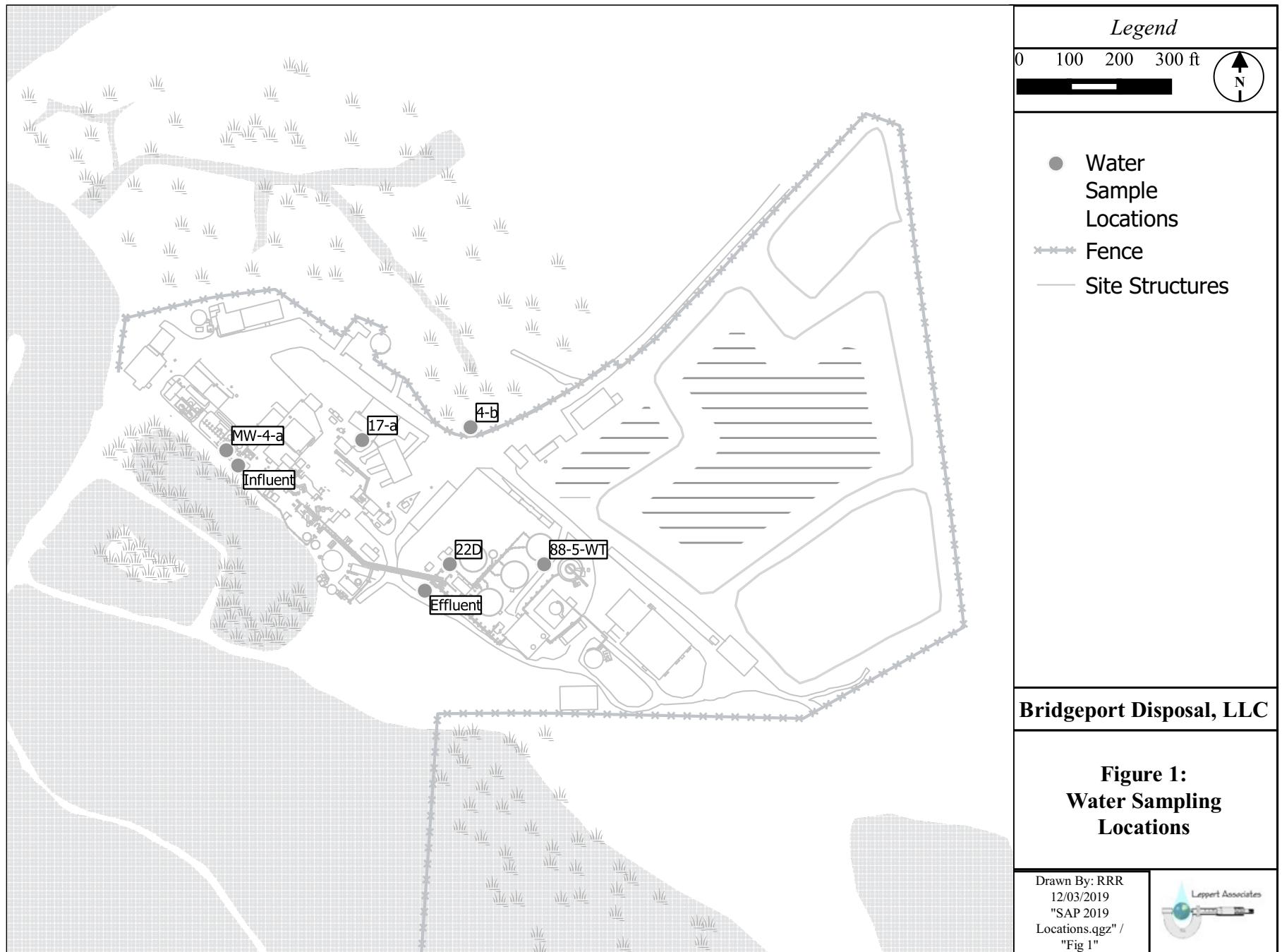
Table 1: *Revised PFAS Constituents List*

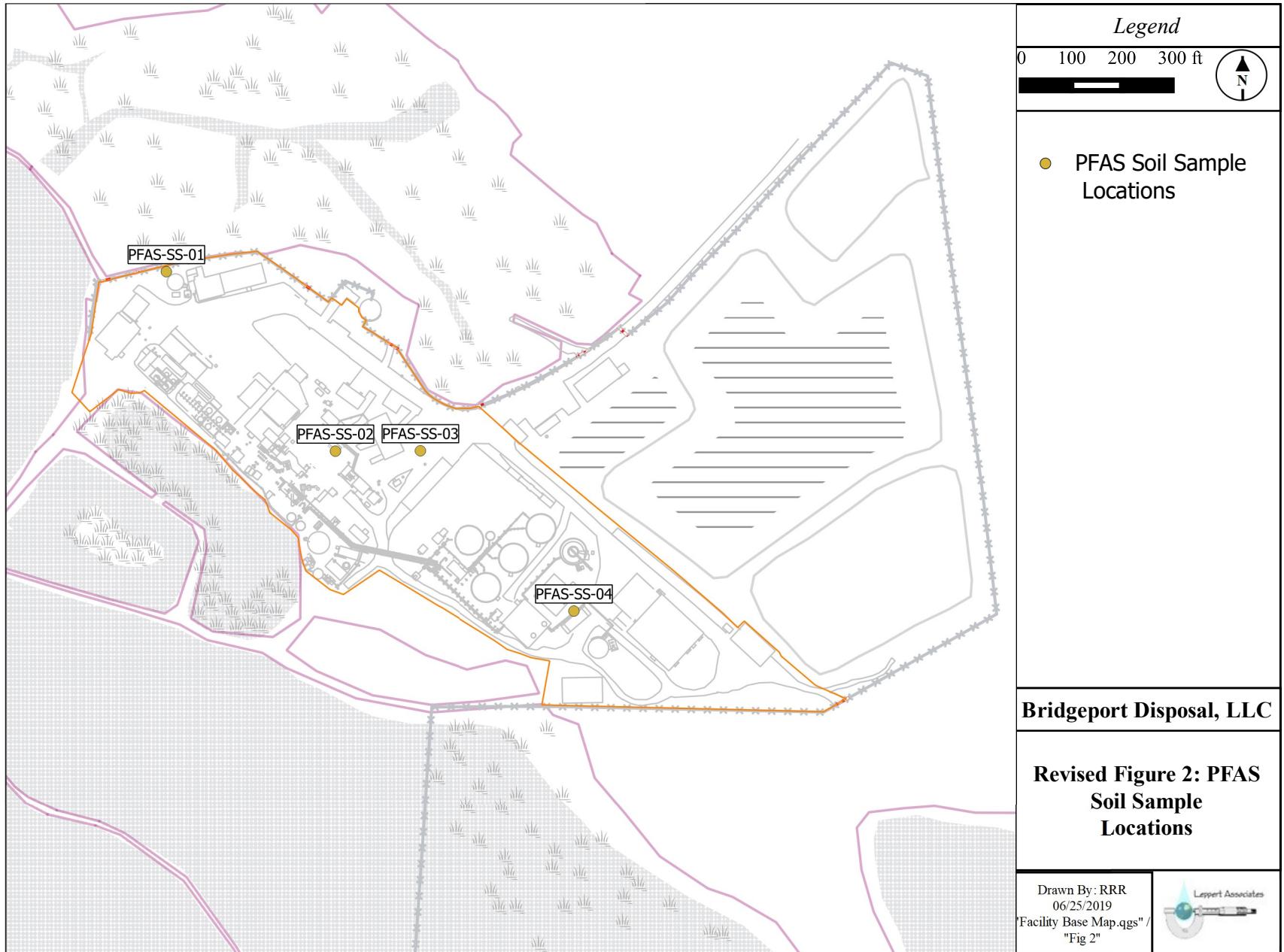
Table 2: *Detected PFAS Constituents in Water Samples*

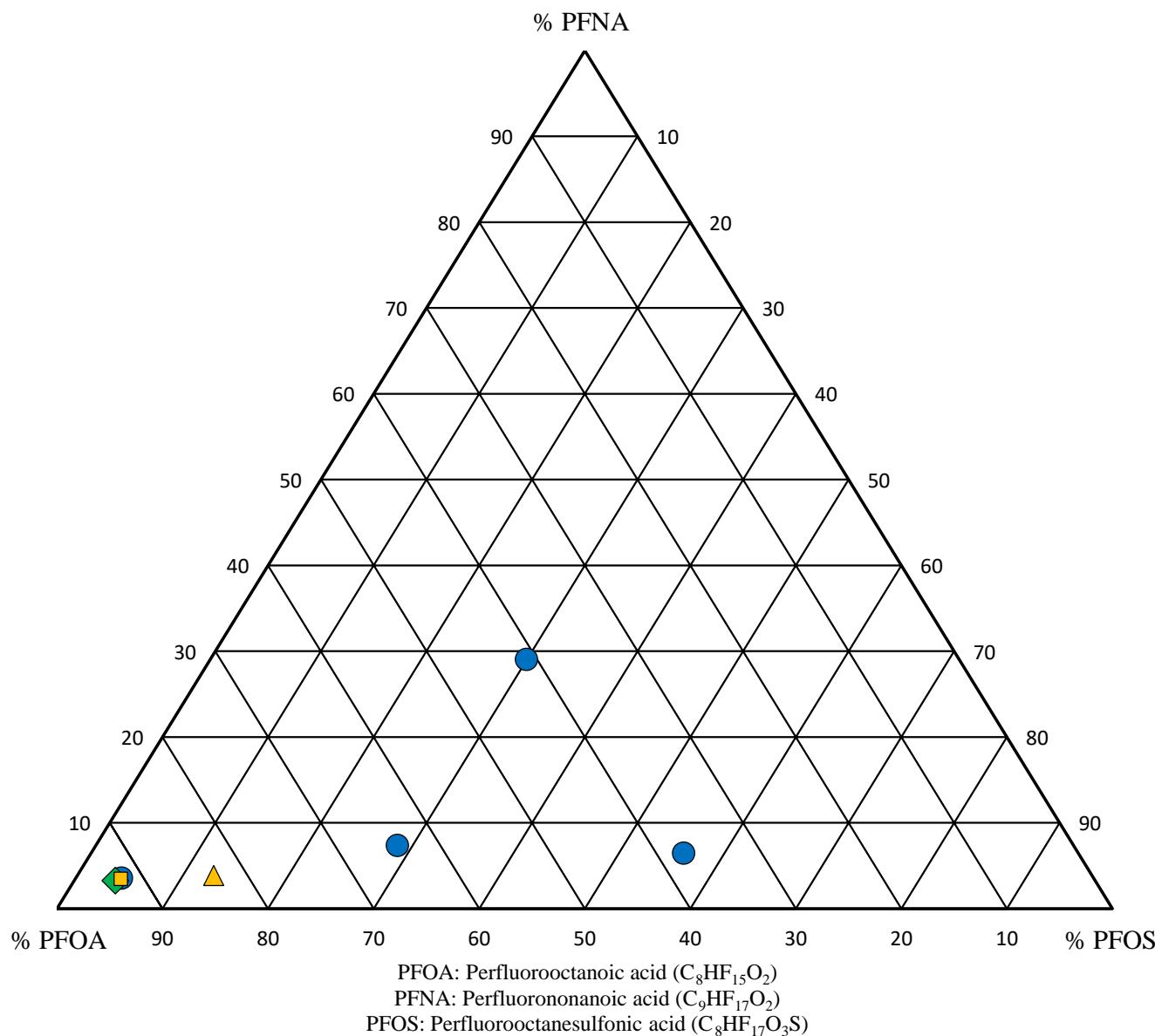
Table 3 *Detected PFAS Constituents in Soil Samples*

Appendix A: *Laboratory Analytical Results*

Appendix B: *Data Validation*







Legend

- Monitoring Wells
- ▲ Abatement Well
- ◆ Influent
- Effluent

Bridgeport Disposal, LLC

Figure 3
Tri-Linear Diagram of
Sampling Results
(mol / total mols)

Drawn By: AE
08/30/2019



Table 1:
Revised PFAS Constituents List - Water and Soil Samples
Clean Harbors Bridgeport Facility

Method	Test Description			Analyte	Water Samples			Soil Samples		
537 (modified)	PFAS, Standard list (21 analyte)	PFAS, NJ List (14 Analyte)	Recently Added Analytes*	PFAS	RL	MDL	Units	RL	MDL	Units
	x	x		Perfluorobutanoic acid (PFBA)	2.00	0.35	ng/L	0.20	0.028	ug/Kg
	x	x		Perfluoropentanoic acid (PFPeA)	2.00	0.49	ng/L	0.20	0.077	ug/Kg
	x	x		Perfluorohexanoic acid (PFHxA)	2.00	0.58	ng/L	0.20	0.042	ug/Kg
	x	x		Perfluoroheptanoic acid (PFHpA)	2.00	0.25	ng/L	0.20	0.029	ug/Kg
	x	x		Perfluorooctanoic acid (PFOA)	2.00	0.85	ng/L	0.20	0.086	ug/Kg
	x	x		Perfluorononanoic acid (PFNA)	2.00	0.27	ng/L	0.20	0.036	ug/Kg
	x	x		Perfluorodecanoic acid (PFDA)	2.00	0.31	ng/L	0.20	0.022	ug/Kg
	x	x		Perfluoroundecanoic acid (PFUnA)	2.00	1.10	ng/L	0.20	0.036	ug/Kg
	x	x		Perfluorododecanoic acid (PFDoA)	2.00	0.55	ng/L	0.20	0.067	ug/Kg
	x	x		Perfluorotridecanoic acid (PFTriA)	2.00	1.30	ng/L	0.20	0.051	ug/Kg
	x	x		Perfluorotetradecanoic acid (PFTeA)	2.00	0.29	ng/L	0.20	0.054	ug/Kg
	x	x		Perfluorobutanesulfonic acid (PFBS)	2.00	0.20	ng/L	0.20	0.025	ug/Kg
	x	x		Perfluorohexanesulfonic acid (PFHxS)	2.00	0.17	ng/L	0.20	0.031	ug/Kg
	x			Perfluoroheptanesulfonic acid (PFHpS)	2.00	0.19	ng/L			ug/Kg
	x	x		Perfluoroctanesulfonic acid (PFOS)	2.00	0.54	ng/L	0.50	0.2	ug/Kg
	x			Perfluorodecanesulfonic acid (PFDS)	2.00	0.32	ng/L			ug/Kg
	x			Perfluoroctane Sulfonamide (FOSA)	2.00	0.35	ng/L			ug/Kg
	x			N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	20.00	3.10	ng/L			ug/Kg
	x			N-ethyl perfluorocatane sulfonamidoacetic acid (NETFOSAA)	20.00	1.90	ng/L			ug/Kg
	x			6:2FTS	20.00	2.00	ng/L			ug/Kg
	x			8:2FTS	20.00	2.00	ng/L			ug/Kg
			x	HFPO-DA (GenX)	2.00	0.24	ng/L	0.20	0.027	ug/Kg
			x	F-53B Major	4.00	1.50	ng/L	0.25	0.11	ug/Kg
			x	F-53B Minor	2.00	0.32	ng/L	0.20	0.022	ug/Kg
			x	DONA	2.00	0.18	ng/L	0.20	0.018	ug/Kg

Notes:

* Recently added by the USEPA - analytes associated with PFAS

MDL - Method Detection Limit

RL - Reporting Limit

Reference: Test America Laboratory

ug/L - micrograms per liter; parts per billion (ppb)

ng/L - nanograms per Liter; parts per trillion (ppt)

Table 2:
Summary of PFAS Constituents Detected in Water Samples
PFAS Screening Event - July 2019
Clean Harbors Bridgeport, LLC

Constituents	Regulatory Limit	Units	Groundwater Monitoring Wells					Abatement Well	Remediation System Ports	
			MW-4-a	MW-14-A (MW-4-a Dup)	4-b	17-a	88-5-WT		22-D	Influent
Perfluorononanoic acid (PFNA)	13	ng/l	27.00	28.00	31.00	290.00	67.00	83.00	59.00	59.00
Perfluorooctanesulfonic acid (PFOS)	10	ng/l	30.00	29.00	290.00	380.00	280.00	300.00	76.00	79.00
Perfluorooctanoic acid (PFOA)	10	ng/l	34.00	36.00	160.00	6700.00	520.00	1600.00	1500.00	1400.00
Perfluorobutanesulfonic acid (PFBS)	NE	ng/l	1.3 J	1.4 J	3.60	46.00	1.6 J	3.90	4.20	4.70
Perfluorobutanoic acid (PFBA)	NE	ng/l	36.00	35.00	100.00	530.00	36.00	54.00	41.00	43.00
Perfluorodecanesulfonic acid (PFDS)	NE	ng/l	3.80	3.90	<2	<2	<2	<2	<2	<2
Perfluorodecanoic acid (PFDA)	NE	ng/l	17.00	17.00	37.00	1400.00	19.00	32.00	11.00	11.00
Perfluorododecanoic acid (PFDoA)	NE	ng/l	6.10	6.40	<2	<2	<2	<2	<2	<2
Perfluoroheptanesulfonic Acid (PFHpS)	NE	ng/l	0.37 J	0.3 J	3.00	2.90	2.10	3.50	0.94 J	0.98 J
Perfluoroheptanoic acid (PFHpA)	NE	ng/l	47.00	46.00	95.00	970.00	54.00	99.00	54.00	51.00
Perfluorohexanesulfonic acid (PFHxS)	NE	ng/l	15.00	16.00	30.00	66.00	15.00	43.00	16.00	19.00
Perfluorohexanoic acid (PFHxA)	NE	ng/l	39.00	36.00	420.00	2000.00	77.00	93.00	61.00	75.00
Perfluorooctanesulfonamide (FOSA)	NE	ng/l	1.7 J	1.5 J	0.68 J	5.00	1.5 J	2.50	0.56 J	0.48 J
Perfluoropentanoic acid (PFPeA)	NE	ng/l	28.00	30.00	210.00	710.00	90.00	120.00	46.00	47.00
Perfluorotetradecanoic acid (PFTeA)	NE	ng/l	<2	<2	<2	<2	<2	<2	0.33 J	<2
Perfluorotridecanoic acid (PFTriA)	NE	ng/l	91.00	93.00	<2	<2	<2	<2	<2	<2
Perfluoroundecanoic acid (PFUnA)	NE	ng/l	18.00	18.00	<2	<2	<2	<2	<2	<2
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	NE	ng/l	<20	<20	<20	<20	<20	<20	<20	<20
N-ethyl perfluorocatane sulfonamidoacetic acid (NEtFOSAA)	NE	ng/l	2.1 J	2.1 J	28.00	3.3 J	2.7 J	6.8 J	3.2 J	2.4 J
6:2FTS	NE	ng/l	<20	<20	2800.00	85.00	11 J	100.00	97.00	98.00
8:2FTS	NE	ng/l	5.7 J	5.8 J	<20	31.00	4.20	27.00	20.00	19.00
HFPO-DA (GenX)	NE	ng/l	34.00	36.00	30.00	230.00	2.3 J	40.00	55.00	48.00
F-53B Major	NE	ng/l	<2	<2	<2	<2	<2	<2	<2	<2
F-53B Minor	NE	ng/l	<2	<2	<2	<2	<2	<2	<2	<2
DONA	NE	ng/l	<2	<2	<2	<2	<2	<2	<2	<2

NOTES:

Regulatory limits are drinking water standards from the State of New Jersey Department of Environmental Protection (NJDEP) Division of Water Monitoring and Standards website <https://nj.gov/dep/wms/bears/gwqs.htm>.

NE= regulatory limit not established

ng/L = nanograms per liter

J - Result is less than the Reporting Limit (RL) but greater than or equal to the Method Detection Limit (MDL) and the concentration is an approximate value.

Black Font = Indicates detection in analytical results.

Blue Font = Indicates non-detection in analytical results, reported as below the reporting limit.

Yellow Highlight = Indicates exceedence of NJDEP regulatory limit for drinking water as listed on <https://nj.gov/dep/wms/bears/gwqs.htm>.

Table 3:
Summary of PFAS Constituents Detected in Soil Samples
PFAS Screening Event - July 2019
Clean Harbors Bridgeport, LLC

Constituents	Regulatory Limit	Units	PFAS-SS-01	PFAS-SS-10 (PFAS-SS-01 Dup)	PFAS-SS-02	PFAS-SS-03	PFAS-SS-04
Perfluorononanoic acid (PFNA)	NE	ug/Kg	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22
Perfluorooctanesulfonic acid (PFOS)	NE	ug/Kg	< 0.55	< 0.55	4.20	0.40 J	< 0.55
Perfluorooctanoic acid (PFOA)	NE	ug/Kg	0.22	0.21 J	1.30	< 0.22	0.19
Perfluorobutanesulfonic acid (PFBS)	NE	ug/Kg	< 0.22	< 0.22	0.052 J	< 0.22	< 0.22
Perfluorobutanoic acid (PFBA)	NE	ug/Kg	0.11 J	0.053 J	0.52	0.033 J	0.035 J
Perfluorodecanesulfonic acid (PFDS)	NE	ug/Kg	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22
Perfluorodecanoic acid (PFDA)	NE	ug/Kg	< 0.22	< 0.22	0.36	0.066 J	0.095 J
Perfluorododecanoic acid (PFDoA)	NE	ug/Kg	< 0.22	< 0.22	0.73	0.078 J	4.10
Perfluoroheptanesulfonic Acid (PFHpS)	NE	ug/Kg	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22
Perfluoroheptanoic acid (PFHpA)	NE	ug/Kg	< 0.22	< 0.22	< 0.22	< 0.22	0.038 J
Perfluorohexanesulfonic acid (PFHxS)	NE	ug/Kg	0.034 J	< 0.22	1.20	0.12 J	< 0.22
Perfluorohexanoic acid (PFHxA)	NE	ug/Kg	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22
Perfluorooctanesulfonamide (FOSA)	NE	ug/Kg	< 0.22	< 0.22	0.18 J	< 0.22	0.18 J
Perfluoropentanoic acid (PFPeA)	NE	ug/Kg	0.18 J	0.098 J	0.26	< 0.22	< 0.22
Perfluorotetradecanoic acid (PFTeA)	NE	ug/Kg	< 0.22	< 0.22	0.88	< 0.22	< 0.22
Perfluorotridecanoic acid (PFTriA)	NE	ug/Kg	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22
Perfluoroundecanoic acid (PFUnA)	NE	ug/Kg	< 0.22	< 0.22	0.54	0.31	< 0.22
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	NE	ug/Kg	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2
N-ethyl perfluorocatane sulfonamidoacetic acid (NEtFOSAA)	NE	ug/Kg	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2
6:2FTS	NE	ug/Kg	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2
8:2FTS	NE	ug/Kg	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2
HFPO-DA (GenX)	NE	ug/Kg	0.28	0.35	< 0.27	< 0.27	0.15 J
F-53B Major	NE	ug/Kg	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22
F-53B Minor	NE	ug/Kg	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22
DONA	NE	ug/Kg	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22

NOTES:

NE= regulatory limit not established

ug/Kg = micrograms per kilograms

J - Result is less than the Reporting Limit (RL) but greater than or equal to the Method Detection Limit (MDL) and the concentration is an approximate value.

Black Font = Indicates detection in analytical results.

Blue Font = Indicates non-detection in analytical results, reported as below the reporting limit.

Appendix A:

Laboratory Analytical Results



Environment Testing TestAmerica



ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-52224-1

Client Project/Site: PFAS, NJ Soil and GW

For:

Leppert Associates Inc
1422 Washington Ave
Golden, Colorado 80401

Attn: Shawn Leppert

Authorized for release by:
8/16/2019 11:38:38 AM

David Alltucker, Project Manager I
(916)374-4383
david.alltucker@testamericainc.com

LINKS

Review your project
results through

Total Access

Have a Question?



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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Qualifiers

LCMS	Qualifier	Qualifier Description
*		Isotope Dilution analyte is outside acceptance limits.
B		Compound was found in the blank and sample.
I		Value is EMPC (estimated maximum possible concentration).
J		Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
D	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Job ID: 320-52224-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative 320-52224-1

Receipt

The samples were received on 7/12/2019 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.6° C.

Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC); sample ID time listed as 14:03 while COC states 14:02. FB-2 (320-52224-9)

LCMS

Method(s) 537 (modified): Results for samples MW-88-5-WT (320-52224-3), Effluent (320-52224-4), 22-D (320-52224-5), Influent (320-52224-6), MW-17-A (320-52224-7) and MW-4-B (320-52224-11) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method(s) 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) recoveries for several analytes preparation batch 320-308297 and analytical batch 320-308908 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recovery are above the method recommended limit for M2-6:2 FTS and M2-8:2 FTS in the 1X analysis of the following samples: MW-4-B (320-52224-11). These samples are reported at dilution with improved IDA recoveries, which are still above the method recommended limit. However, Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS the following samples: PFAS-SS-01 (320-52224-12) and PFAS-SS-10 (320-52224-13). The samples were re-analyzed with concurring results. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS the following samples: PFAS-SS-02 (320-52224-15). The samples were re-analyzed with concurring results. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): The "l" qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s). MW-4-A (320-52224-1) and MW-14-A (320-52224-2)

Method(s) 537 (modified): The "l" qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte. PFAS-SS-01 (320-52224-12) and PFAS-SS-10 (320-52224-13)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-307651.

Method(s) 3535: The following samples are light brown and have brown particulates at the bottom of the bottle: 22-D (320-52224-5), Influent (320-52224-6), MW-17-A (320-52224-7) and MW-4-B (320-52224-11)

Case Narrative

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Job ID: 320-52224-1 (Continued)

Laboratory: Eurofins TestAmerica, Sacramento (Continued)

Method(s) 3535: The following samples are slightly yellow after extraction: 22-D (320-52224-5) and MW-17-A (320-52224-7).

Method(s) 3535: The following sample is light blue after extraction: MW-4-B (320-52224-11)

Method(s) SHAKE: After the final volume, the following sample exhibits a yellow coloration: PFAS-SS-02 (320-52224-15).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: MW-4-A

Lab Sample ID: 320-52224-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	36		1.9	0.33	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	28		1.9	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	39		1.9	0.55	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	47		1.9	0.24	ng/L	1		537 (modified)	Total/NA
Perfluoroctanoic acid (PFOA)	34		1.9	0.81	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	27		1.9	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	17		1.9	0.30	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	18		1.9	1.0	ng/L	1		537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	6.1		1.9	0.52	ng/L	1		537 (modified)	Total/NA
Perfluorotridecanoic acid (PFTriA)	91 I		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.3 J		1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexamersulfonic acid (PFHxS)	15 B		1.9	0.16	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.37 J		1.9	0.18	ng/L	1		537 (modified)	Total/NA
Perfluoroctanesulfonic acid (PFOS)	30		1.9	0.51	ng/L	1		537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	3.8		1.9	0.30	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	1.7 J		1.9	0.33	ng/L	1		537 (modified)	Total/NA
N-ethylperfluoroctanesulfonamidoacetic acid (NEtFOSAA)	2.1 J		19	1.8	ng/L	1		537 (modified)	Total/NA
8:2 FTS	5.7 J		19	1.9	ng/L	1		537 (modified)	Total/NA
HFPO-DA (GenX)	34		3.8	1.4	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-14-A

Lab Sample ID: 320-52224-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	35		2.0	0.35	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	30		2.0	0.49	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	36		2.0	0.58	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	46		2.0	0.25	ng/L	1		537 (modified)	Total/NA
Perfluoroctanoic acid (PFOA)	36		2.0	0.85	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	28		2.0	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	17		2.0	0.31	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	18		2.0	1.1	ng/L	1		537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	6.4		2.0	0.55	ng/L	1		537 (modified)	Total/NA
Perfluorotridecanoic acid (PFTriA)	93 I		2.0	1.3	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.4 J		2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorohexamersulfonic acid (PFHxS)	16 B		2.0	0.17	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.30 J		2.0	0.19	ng/L	1		537 (modified)	Total/NA
Perfluoroctanesulfonic acid (PFOS)	29		2.0	0.54	ng/L	1		537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	3.9		2.0	0.32	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	1.5 J		2.0	0.35	ng/L	1		537 (modified)	Total/NA
N-ethylperfluoroctanesulfonamidoacetic acid (NEtFOSAA)	2.1 J		20	1.9	ng/L	1		537 (modified)	Total/NA
8:2 FTS	5.8 J		20	2.0	ng/L	1		537 (modified)	Total/NA
HFPO-DA (GenX)	36		4.0	1.5	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-88-5-WT

Lab Sample ID: 320-52224-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	36		1.8	0.32	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	90		1.8	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	77		1.8	0.53	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: MW-88-5-WT (Continued)

Lab Sample ID: 320-52224-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	54		1.8	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	67		1.8	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	19		1.8	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.6	J	1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	15	B	1.8	0.15	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	2.1		1.8	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	280		1.8	0.49	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	1.5	J	1.8	0.32	ng/L	1		537 (modified)	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.7	J	18	1.7	ng/L	1		537 (modified)	Total/NA
6:2 FTS	11	J	18	1.8	ng/L	1		537 (modified)	Total/NA
8:2 FTS	4.2	J	18	1.8	ng/L	1		537 (modified)	Total/NA
HFPO-DA (GenX)	2.3	J	3.6	1.4	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	520		18	7.7	ng/L	10		537 (modified)	Total/NA

Client Sample ID: Effluent

Lab Sample ID: 320-52224-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	43		1.9	0.33	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PPPeA)	47		1.9	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	75		1.9	0.55	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	51		1.9	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	59		1.9	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	11		1.9	0.29	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.7		1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	19	B	1.9	0.16	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.98	J	1.9	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	79		1.9	0.51	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.48	J	1.9	0.33	ng/L	1		537 (modified)	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.4	J	19	1.8	ng/L	1		537 (modified)	Total/NA
6:2 FTS	98		19	1.9	ng/L	1		537 (modified)	Total/NA
8:2 FTS	19		19	1.9	ng/L	1		537 (modified)	Total/NA
HFPO-DA (GenX)	48		3.8	1.4	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	1400		19	8.0	ng/L	10		537 (modified)	Total/NA

Client Sample ID: 22-D

Lab Sample ID: 320-52224-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	54		1.9	0.33	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PPPeA)	120		1.9	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	93		1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	99		1.9	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	83		1.9	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	32		1.9	0.29	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.9		1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	43	B	1.9	0.16	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	3.5		1.9	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	300		1.9	0.51	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	2.5		1.9	0.33	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: 22-D (Continued)

Lab Sample ID: 320-52224-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
N-ethylperfluoroctanesulfonamidoacetic acid (NEtFOSAA)	6.8	J	19	1.8	ng/L	1	537 (modified)	Total/NA	
6:2 FTS	100		19	1.9	ng/L	1	537 (modified)	Total/NA	
8:2 FTS	27		19	1.9	ng/L	1	537 (modified)	Total/NA	
HFPO-DA (GenX)	40		3.7	1.4	ng/L	1	537 (modified)	Total/NA	
Perfluoroctanoic acid (PFOA) - DL	1600		19	8.0	ng/L	10	537 (modified)	Total/NA	

Client Sample ID: Influent

Lab Sample ID: 320-52224-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	41		2.0	0.35	ng/L	1	537 (modified)	Total/NA	
Perfluoropentanoic acid (PPPeA)	46		2.0	0.48	ng/L	1	537 (modified)	Total/NA	
Perfluorohexanoic acid (PFHxA)	61		2.0	0.57	ng/L	1	537 (modified)	Total/NA	
Perfluoroheptanoic acid (PFHpA)	54		2.0	0.25	ng/L	1	537 (modified)	Total/NA	
Perfluorononanoic acid (PFNA)	59		2.0	0.27	ng/L	1	537 (modified)	Total/NA	
Perfluorodecanoic acid (PFDA)	11		2.0	0.31	ng/L	1	537 (modified)	Total/NA	
Perfluorotetradecanoic acid (PFTeA)	0.33	J	2.0	0.29	ng/L	1	537 (modified)	Total/NA	
Perfluorobutanesulfonic acid (PFBS)	4.2		2.0	0.20	ng/L	1	537 (modified)	Total/NA	
Perfluorohexanesulfonic acid (PFHxS)	16	B	2.0	0.17	ng/L	1	537 (modified)	Total/NA	
Perfluoroheptanesulfonic Acid (PFHpS)	0.94	J	2.0	0.19	ng/L	1	537 (modified)	Total/NA	
Perfluoroctanesulfonic acid (PFOS)	76		2.0	0.53	ng/L	1	537 (modified)	Total/NA	
Perfluoroctanesulfonamide (FOSA)	0.56	J	2.0	0.35	ng/L	1	537 (modified)	Total/NA	
N-ethylperfluoroctanesulfonamidoacetic acid (NEtFOSAA)	3.2	J	20	1.9	ng/L	1	537 (modified)	Total/NA	
6:2 FTS	97		20	2.0	ng/L	1	537 (modified)	Total/NA	
8:2 FTS	20		20	2.0	ng/L	1	537 (modified)	Total/NA	
HFPO-DA (GenX)	55		3.9	1.5	ng/L	1	537 (modified)	Total/NA	
Perfluoroctanoic acid (PFOA) - DL	1500		20	8.4	ng/L	10	537 (modified)	Total/NA	

Client Sample ID: MW-17-A

Lab Sample ID: 320-52224-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	290		1.8	0.25	ng/L	1	537 (modified)	Total/NA	
Perfluorobutanesulfonic acid (PFBS)	46		1.8	0.18	ng/L	1	537 (modified)	Total/NA	
Perfluorohexanesulfonic acid (PFHxS)	66	B	1.8	0.16	ng/L	1	537 (modified)	Total/NA	
Perfluoroheptanesulfonic Acid (PFHpS)	2.9		1.8	0.18	ng/L	1	537 (modified)	Total/NA	
Perfluoroctanesulfonamide (FOSA)	5.0		1.8	0.32	ng/L	1	537 (modified)	Total/NA	
N-ethylperfluoroctanesulfonamidoacetic acid (NEtFOSAA)	3.3	J	18	1.8	ng/L	1	537 (modified)	Total/NA	
6:2 FTS	85		18	1.8	ng/L	1	537 (modified)	Total/NA	
8:2 FTS	31		18	1.8	ng/L	1	537 (modified)	Total/NA	
Perfluorobutanoic acid (PFBA) - DL	530		18	3.2	ng/L	10	537 (modified)	Total/NA	
Perfluoropentanoic acid (PPPeA) - DL	710		18	4.5	ng/L	10	537 (modified)	Total/NA	
Perfluorohexanoic acid (PFHxA) - DL	2000		18	5.3	ng/L	10	537 (modified)	Total/NA	
Perfluoroheptanoic acid (PFHpA) - DL	970		18	2.3	ng/L	10	537 (modified)	Total/NA	
Perfluorodecanoic acid (PFDA) - DL	1400		18	2.9	ng/L	10	537 (modified)	Total/NA	
Perfluoroctanesulfonic acid (PFOS) - DL	380		18	5.0	ng/L	10	537 (modified)	Total/NA	
HFPO-DA (GenX) - DL	230		37	14	ng/L	10	537 (modified)	Total/NA	
Perfluoroctanoic acid (PFOA) - DL2	6700		92	39	ng/L	50	537 (modified)	Total/NA	

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: EB-2

Lab Sample ID: 320-52224-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.32	J B	1.9	0.16	ng/L	1		537 (modified)	Total/NA

Client Sample ID: FB-2

Lab Sample ID: 320-52224-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.26	J B	1.8	0.15	ng/L	1		537 (modified)	Total/NA

Client Sample ID: EB-3

Lab Sample ID: 320-52224-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.24	J B	1.8	0.15	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-4-B

Lab Sample ID: 320-52224-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	100		1.9	0.33	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	210		1.9	0.46	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	95		1.9	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	160		1.9	0.80	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	31		1.9	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	37		1.9	0.29	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.6		1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	30	B	1.9	0.16	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	3.0		1.9	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	290		1.9	0.51	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.68	J	1.9	0.33	ng/L	1		537 (modified)	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	28		19	1.8	ng/L	1		537 (modified)	Total/NA
HFPO-DA (GenX)	30		3.8	1.4	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	420		19	5.5	ng/L	10		537 (modified)	Total/NA
6:2 FTS - DL	2800		190	19	ng/L	10		537 (modified)	Total/NA

Client Sample ID: PFAS-SS-01

Lab Sample ID: 320-52224-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.11	J	0.22	0.031	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.18	J	0.22	0.085	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.22	I	0.22	0.094	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.034	J	0.22	0.034	ug/Kg	1	⊗	537 (modified)	Total/NA
HFPO-DA (GenX)	0.28		0.27	0.12	ug/Kg	1	⊗	537 (modified)	Total/NA

Client Sample ID: PFAS-SS-10

Lab Sample ID: 320-52224-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.053	J	0.22	0.030	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.098	J	0.22	0.083	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.21	J I	0.22	0.093	ug/Kg	1	⊗	537 (modified)	Total/NA
HFPO-DA (GenX)	0.35		0.27	0.12	ug/Kg	1	⊗	537 (modified)	Total/NA

Client Sample ID: PFAS-SS-04

Lab Sample ID: 320-52224-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.035	J	0.22	0.030	ug/Kg	1	⊗	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Detection Summary

Client: Leppert Associates Inc

Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: PFAS-SS-04 (Continued)

Lab Sample ID: 320-52224-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	0.038	J	0.22	0.032	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.19	J	0.22	0.094	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.095	J	0.22	0.024	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	4.1		0.22	0.073	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.18	J	0.22	0.089	ug/Kg	1	⊗	537 (modified)	Total/NA
HFPO-DA (GenX)	0.15	J	0.27	0.12	ug/Kg	1	⊗	537 (modified)	Total/NA

Client Sample ID: PFAS-SS-02

Lab Sample ID: 320-52224-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.52		0.23	0.032	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.26		0.23	0.088	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	1.3		0.23	0.098	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.36		0.23	0.025	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.54		0.23	0.041	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.73		0.23	0.076	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.88		0.23	0.061	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.052	J	0.23	0.028	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.2		0.23	0.035	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.2		0.57	0.23	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.18	J	0.23	0.093	ug/Kg	1	⊗	537 (modified)	Total/NA

Client Sample ID: PFAS-SS-03

Lab Sample ID: 320-52224-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.033	J	0.23	0.032	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.066	J	0.23	0.025	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.31		0.23	0.041	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.078	J	0.23	0.076	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.12	J	0.23	0.035	ug/Kg	1	⊗	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.40	J	0.57	0.23	ug/Kg	1	⊗	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: MW-4-A
Date Collected: 07/11/19 09:53
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-1
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	36		1.9	0.33	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluoropentanoic acid (PFPeA)	28		1.9	0.47	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluorohexanoic acid (PFHxA)	39		1.9	0.55	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluoroheptanoic acid (PFHpA)	47		1.9	0.24	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluorooctanoic acid (PFOA)	34		1.9	0.81	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluorononanoic acid (PFNA)	27		1.9	0.26	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluorodecanoic acid (PFDA)	17		1.9	0.30	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluoroundecanoic acid (PFUnA)	18		1.9	1.0	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluorododecanoic acid (PFDoA)	6.1		1.9	0.52	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluorotridecanoic acid (PFTriA)	91 I		1.9	1.2	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluorobutanesulfonic acid (PFBS)	1.3 J		1.9	0.19	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluorohexanesulfonic acid (PFHxS)	15 B		1.9	0.16	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluoroheptanesulfonic Acid (PFHpS)	0.37 J		1.9	0.18	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluorooctanesulfonic acid (PFOS)	30		1.9	0.51	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluorodecanesulfonic acid (PFDS)	3.8		1.9	0.30	ng/L	07/15/19 05:24	07/16/19 05:01		1
Perfluorooctanesulfonamide (FOSA)	1.7 J		1.9	0.33	ng/L	07/15/19 05:24	07/16/19 05:01		1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19	3.0	ng/L	07/15/19 05:24	07/16/19 05:01		1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.1 J		19	1.8	ng/L	07/15/19 05:24	07/16/19 05:01		1
6:2 FTS	ND		19	1.9	ng/L	07/15/19 05:24	07/16/19 05:01		1
8:2 FTS	5.7 J		19	1.9	ng/L	07/15/19 05:24	07/16/19 05:01		1
F-53B Major	ND		1.9	0.23	ng/L	07/15/19 05:24	07/16/19 05:01		1
HFPO-DA (GenX)	34		3.8	1.4	ng/L	07/15/19 05:24	07/16/19 05:01		1
F-53B Minor	ND		1.9	0.30	ng/L	07/15/19 05:24	07/16/19 05:01		1
DONA	ND		1.9	0.17	ng/L	07/15/19 05:24	07/16/19 05:01		1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
13C4 PFBA	65		25 - 150			07/15/19 05:24	07/16/19 05:01		1
13C5-PFPeA DNU	73		25 - 150			07/15/19 05:24	07/16/19 05:01		1
13C2 PFHxA	89		25 - 150			07/15/19 05:24	07/16/19 05:01		1
13C4 PFHpA	95		25 - 150			07/15/19 05:24	07/16/19 05:01		1
13C4 PFOA	95		25 - 150			07/15/19 05:24	07/16/19 05:01		1
13C5 PFNA	89		25 - 150			07/15/19 05:24	07/16/19 05:01		1
13C2 PFDA	95		25 - 150			07/15/19 05:24	07/16/19 05:01		1
13C2 PFUnA	96		25 - 150			07/15/19 05:24	07/16/19 05:01		1
13C2 PFDoA	93		25 - 150			07/15/19 05:24	07/16/19 05:01		1
13C2 PFTeDA	100		25 - 150			07/15/19 05:24	07/16/19 05:01		1
13C3 PFBS	90		25 - 150			07/15/19 05:24	07/16/19 05:01		1
18O2 PFHxS	103		25 - 150			07/15/19 05:24	07/16/19 05:01		1
13C4 PFOS	98		25 - 150			07/15/19 05:24	07/16/19 05:01		1
13C8 FOSA	82		25 - 150			07/15/19 05:24	07/16/19 05:01		1
d3-NMeFOSAA	91		25 - 150			07/15/19 05:24	07/16/19 05:01		1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: MW-4-A
Date Collected: 07/11/19 09:53
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-1
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	93		25 - 150	07/15/19 05:24	07/16/19 05:01	1
M2-6:2 FTS	137		25 - 150	07/15/19 05:24	07/16/19 05:01	1
M2-8:2 FTS	120		25 - 150	07/15/19 05:24	07/16/19 05:01	1
13C3 HFPO-DA	68		25 - 150	07/15/19 05:24	07/16/19 05:01	1

Client Sample ID: MW-14-A

Date Collected: 07/11/19 00:00
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-2
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	35		2.0	0.35	ng/L	07/15/19 05:24	07/16/19 05:09	1	10
Perfluoropentanoic acid (PFPeA)	30		2.0	0.49	ng/L	07/15/19 05:24	07/16/19 05:09	1	11
Perfluorohexanoic acid (PFHxA)	36		2.0	0.58	ng/L	07/15/19 05:24	07/16/19 05:09	1	12
Perfluoroheptanoic acid (PFHpA)	46		2.0	0.25	ng/L	07/15/19 05:24	07/16/19 05:09	1	13
Perfluorooctanoic acid (PFOA)	36		2.0	0.85	ng/L	07/15/19 05:24	07/16/19 05:09	1	14
Perfluorononanoic acid (PFNA)	28		2.0	0.27	ng/L	07/15/19 05:24	07/16/19 05:09	1	15
Perfluorodecanoic acid (PFDA)	17		2.0	0.31	ng/L	07/15/19 05:24	07/16/19 05:09	1	16
Perfluoroundecanoic acid (PFUnA)	18		2.0	1.1	ng/L	07/15/19 05:24	07/16/19 05:09	1	17
Perfluorododecanoic acid (PFDoA)	6.4		2.0	0.55	ng/L	07/15/19 05:24	07/16/19 05:09	1	18
Perfluorotridecanoic acid (PFTriA)	93 I		2.0	1.3	ng/L	07/15/19 05:24	07/16/19 05:09	1	19
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L	07/15/19 05:24	07/16/19 05:09	1	20
Perfluorobutanesulfonic acid (PFBS)	1.4 J		2.0	0.20	ng/L	07/15/19 05:24	07/16/19 05:09	1	21
Perfluorohexanesulfonic acid (PFHxS)	16 B		2.0	0.17	ng/L	07/15/19 05:24	07/16/19 05:09	1	22
Perfluoroheptanesulfonic Acid (PFHpS)	0.30 J		2.0	0.19	ng/L	07/15/19 05:24	07/16/19 05:09	1	23
Perfluorooctanesulfonic acid (PFOS)	29		2.0	0.54	ng/L	07/15/19 05:24	07/16/19 05:09	1	24
Perfluorodecanesulfonic acid (PFDS)	3.9		2.0	0.32	ng/L	07/15/19 05:24	07/16/19 05:09	1	25
Perfluorooctanesulfonamide (FOSA)	1.5 J		2.0	0.35	ng/L	07/15/19 05:24	07/16/19 05:09	1	26
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L	07/15/19 05:24	07/16/19 05:09	1	27
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.1 J		20	1.9	ng/L	07/15/19 05:24	07/16/19 05:09	1	28
6:2 FTS	ND		20	2.0	ng/L	07/15/19 05:24	07/16/19 05:09	1	29
8:2 FTS	5.8 J		20	2.0	ng/L	07/15/19 05:24	07/16/19 05:09	1	30
F-53B Major	ND		2.0	0.24	ng/L	07/15/19 05:24	07/16/19 05:09	1	31
HFPO-DA (GenX)	36		4.0	1.5	ng/L	07/15/19 05:24	07/16/19 05:09	1	32
F-53B Minor	ND		2.0	0.32	ng/L	07/15/19 05:24	07/16/19 05:09	1	33
DONA	ND		2.0	0.18	ng/L	07/15/19 05:24	07/16/19 05:09	1	34
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFBA	62		25 - 150	07/15/19 05:24	07/16/19 05:09	1			
13C5-PFPeA DNU	71		25 - 150	07/15/19 05:24	07/16/19 05:09	1			
13C2 PFHxA	82		25 - 150	07/15/19 05:24	07/16/19 05:09	1			
13C4 PFHpA	95		25 - 150	07/15/19 05:24	07/16/19 05:09	1			

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: MW-14-A
Date Collected: 07/11/19 00:00
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-2
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	90		25 - 150	07/15/19 05:24	07/16/19 05:09	1
13C5 PFNA	89		25 - 150	07/15/19 05:24	07/16/19 05:09	1
13C2 PFDA	95		25 - 150	07/15/19 05:24	07/16/19 05:09	1
13C2 PFUnA	91		25 - 150	07/15/19 05:24	07/16/19 05:09	1
13C2 PFDoA	92		25 - 150	07/15/19 05:24	07/16/19 05:09	1
13C2 PFTeDA	99		25 - 150	07/15/19 05:24	07/16/19 05:09	1
13C3 PFBS	91		25 - 150	07/15/19 05:24	07/16/19 05:09	1
18O2 PFHxS	98		25 - 150	07/15/19 05:24	07/16/19 05:09	1
13C4 PFOS	95		25 - 150	07/15/19 05:24	07/16/19 05:09	1
13C8 FOSA	83		25 - 150	07/15/19 05:24	07/16/19 05:09	1
d3-NMeFOSAA	87		25 - 150	07/15/19 05:24	07/16/19 05:09	1
d5-NEtFOSAA	86		25 - 150	07/15/19 05:24	07/16/19 05:09	1
M2-6:2 FTS	144		25 - 150	07/15/19 05:24	07/16/19 05:09	1
M2-8:2 FTS	117		25 - 150	07/15/19 05:24	07/16/19 05:09	1
13C3 HFPO-DA	66		25 - 150	07/15/19 05:24	07/16/19 05:09	1

Client Sample ID: MW-88-5-WT

Date Collected: 07/11/19 11:15
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-3
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	36		1.8	0.32	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluoropentanoic acid (PFPeA)	90		1.8	0.44	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluorohexanoic acid (PFHxA)	77		1.8	0.53	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluoroheptanoic acid (PFHpA)	54		1.8	0.23	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluorononanoic acid (PFNA)	67		1.8	0.25	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluorodecanoic acid (PFDA)	19		1.8	0.28	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluorobutanesulfonic acid (PFBS)	1.6 J		1.8	0.18	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluorohexanesulfonic acid (PFHxS)	15 B		1.8	0.15	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluoroheptanesulfonic Acid (PFHpS)	2.1		1.8	0.17	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluoroctanesulfonic acid (PFOS)	280		1.8	0.49	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29	ng/L	07/15/19 05:24	07/16/19 05:17		1
Perfluoroctanesulfonamide (FOSA)	1.5 J		1.8	0.32	ng/L	07/15/19 05:24	07/16/19 05:17		1
N-methylperfluoroctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.8	ng/L	07/15/19 05:24	07/16/19 05:17		1
N-ethylperfluoroctanesulfonamidoacetic acid (NEtFOSAA)	2.7 J		18	1.7	ng/L	07/15/19 05:24	07/16/19 05:17		1
6:2 FTS	11 J		18	1.8	ng/L	07/15/19 05:24	07/16/19 05:17		1
8:2 FTS	4.2 J		18	1.8	ng/L	07/15/19 05:24	07/16/19 05:17		1
F-53B Major	ND		1.8	0.22	ng/L	07/15/19 05:24	07/16/19 05:17		1
HFPO-DA (GenX)	2.3 J		3.6	1.4	ng/L	07/15/19 05:24	07/16/19 05:17		1
F-53B Minor	ND		1.8	0.29	ng/L	07/15/19 05:24	07/16/19 05:17		1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: MW-88-5-WT
Date Collected: 07/11/19 11:15
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-3
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DONA	ND		1.8	0.16	ng/L		07/15/19 05:24	07/16/19 05:17	1
<i>Isotope Dilution</i>	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	71		25 - 150				07/15/19 05:24	07/16/19 05:17	1
13C5-PFPeA DNU	75		25 - 150				07/15/19 05:24	07/16/19 05:17	1
13C2 PFHxA	87		25 - 150				07/15/19 05:24	07/16/19 05:17	1
13C4 PFHpA	90		25 - 150				07/15/19 05:24	07/16/19 05:17	1
13C5 PFNA	86		25 - 150				07/15/19 05:24	07/16/19 05:17	1
13C2 PFDA	91		25 - 150				07/15/19 05:24	07/16/19 05:17	1
13C2 PFUnA	82		25 - 150				07/15/19 05:24	07/16/19 05:17	1
13C2 PFDoA	77		25 - 150				07/15/19 05:24	07/16/19 05:17	1
13C2 PFTeDA	85		25 - 150				07/15/19 05:24	07/16/19 05:17	1
13C3 PFBS	89		25 - 150				07/15/19 05:24	07/16/19 05:17	1
18O2 PFHxS	97		25 - 150				07/15/19 05:24	07/16/19 05:17	1
13C4 PFOS	90		25 - 150				07/15/19 05:24	07/16/19 05:17	1
13C8 FOSA	69		25 - 150				07/15/19 05:24	07/16/19 05:17	1
d3-NMeFOSAA	50		25 - 150				07/15/19 05:24	07/16/19 05:17	1
d5-NeTFOSAA	80		25 - 150				07/15/19 05:24	07/16/19 05:17	1
M2-6:2 FTS	91		25 - 150				07/15/19 05:24	07/16/19 05:17	1
M2-8:2 FTS	88		25 - 150				07/15/19 05:24	07/16/19 05:17	1
13C3 HFPO-DA	69		25 - 150				07/15/19 05:24	07/16/19 05:17	1

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	520		18	7.7	ng/L		07/15/19 05:24	07/19/19 21:36	10
<i>Isotope Dilution</i>	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	81		25 - 150				07/15/19 05:24	07/19/19 21:36	10

Client Sample ID: Effluent

Date Collected: 07/11/19 11:55
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-4
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	43		1.9	0.33	ng/L		07/15/19 05:24	07/16/19 05:25	1
Perfluoropentanoic acid (PFPeA)	47		1.9	0.46	ng/L		07/15/19 05:24	07/16/19 05:25	1
Perfluorohexanoic acid (PFHxA)	75		1.9	0.55	ng/L		07/15/19 05:24	07/16/19 05:25	1
Perfluoroheptanoic acid (PFHpA)	51		1.9	0.24	ng/L		07/15/19 05:24	07/16/19 05:25	1
Perfluorononanoic acid (PFNA)	59		1.9	0.25	ng/L		07/15/19 05:24	07/16/19 05:25	1
Perfluorodecanoic acid (PFDA)	11		1.9	0.29	ng/L		07/15/19 05:24	07/16/19 05:25	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		07/15/19 05:24	07/16/19 05:25	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		07/15/19 05:24	07/16/19 05:25	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		07/15/19 05:24	07/16/19 05:25	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.27	ng/L		07/15/19 05:24	07/16/19 05:25	1
Perfluorobutanesulfonic acid (PFBS)	4.7		1.9	0.19	ng/L		07/15/19 05:24	07/16/19 05:25	1
Perfluorohexanesulfonic acid (PFHxS)	19 B		1.9	0.16	ng/L		07/15/19 05:24	07/16/19 05:25	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.98 J		1.9	0.18	ng/L		07/15/19 05:24	07/16/19 05:25	1
Perfluorooctanesulfonic acid (PFOS)	79		1.9	0.51	ng/L		07/15/19 05:24	07/16/19 05:25	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: Effluent
Date Collected: 07/11/19 11:55
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-4
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L				1
Perfluorooctanesulfonamide (FOSA)	0.48	J	1.9	0.33	ng/L				1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19	2.9	ng/L				1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.4	J	19	1.8	ng/L				1
6:2 FTS	98		19	1.9	ng/L				1
8:2 FTS	19		19	1.9	ng/L				1
F-53B Major	ND		1.9	0.23	ng/L				1
HFPO-DA (GenX)	48		3.8	1.4	ng/L				1
F-53B Minor	ND		1.9	0.30	ng/L				1
DONA	ND		1.9	0.17	ng/L				1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	82		25 - 150				07/15/19 05:24	07/16/19 05:25	1
13C5-PFPeA DNU	91		25 - 150				07/15/19 05:24	07/16/19 05:25	1
13C2 PFHxA	95		25 - 150				07/15/19 05:24	07/16/19 05:25	1
13C4 PFHpA	109		25 - 150				07/15/19 05:24	07/16/19 05:25	1
13C5 PFNA	101		25 - 150				07/15/19 05:24	07/16/19 05:25	1
13C2 PFDA	105		25 - 150				07/15/19 05:24	07/16/19 05:25	1
13C2 PFUnA	100		25 - 150				07/15/19 05:24	07/16/19 05:25	1
13C2 PFDa	94		25 - 150				07/15/19 05:24	07/16/19 05:25	1
13C2 PFTeDA	94		25 - 150				07/15/19 05:24	07/16/19 05:25	1
13C3 PFBS	98		25 - 150				07/15/19 05:24	07/16/19 05:25	1
18O2 PFHxS	110		25 - 150				07/15/19 05:24	07/16/19 05:25	1
13C4 PFOS	104		25 - 150				07/15/19 05:24	07/16/19 05:25	1
13C8 FOSA	84		25 - 150				07/15/19 05:24	07/16/19 05:25	1
d3-NMeFOSAA	87		25 - 150				07/15/19 05:24	07/16/19 05:25	1
d5-NEtFOSAA	89		25 - 150				07/15/19 05:24	07/16/19 05:25	1
M2-6:2 FTS	96		25 - 150				07/15/19 05:24	07/16/19 05:25	1
M2-8:2 FTS	102		25 - 150				07/15/19 05:24	07/16/19 05:25	1
13C3 HFPO-DA	74		25 - 150				07/15/19 05:24	07/16/19 05:25	1

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1400		19	8.0	ng/L				10
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	92		25 - 150				07/15/19 05:24	07/19/19 21:44	10

Client Sample ID: 22-D

Date Collected: 07/11/19 12:15
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-5
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	54		1.9	0.33	ng/L				1
Perfluoropentanoic acid (PFPeA)	120		1.9	0.46	ng/L				1
Perfluorohexanoic acid (PFHxA)	93		1.9	0.54	ng/L				1
Perfluoroheptanoic acid (PFHpA)	99		1.9	0.23	ng/L				1
Perfluorononanoic acid (PFNA)	83		1.9	0.25	ng/L				1

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Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: 22-D

Date Collected: 07/11/19 12:15

Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-5

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	32		1.9	0.29	ng/L		07/15/19 05:24	07/16/19 05:33	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		07/15/19 05:24	07/16/19 05:33	1
Perfluorododecanoic acid (PFDaA)	ND		1.9	0.51	ng/L		07/15/19 05:24	07/16/19 05:33	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		07/15/19 05:24	07/16/19 05:33	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.27	ng/L		07/15/19 05:24	07/16/19 05:33	1
Perfluorobutanesulfonic acid (PFBS)	3.9		1.9	0.19	ng/L		07/15/19 05:24	07/16/19 05:33	1
Perfluorohexanesulfonic acid (PFHxS)	43	B	1.9	0.16	ng/L		07/15/19 05:24	07/16/19 05:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	3.5		1.9	0.18	ng/L		07/15/19 05:24	07/16/19 05:33	1
Perfluorooctanesulfonic acid (PFOS)	300		1.9	0.51	ng/L		07/15/19 05:24	07/16/19 05:33	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		07/15/19 05:24	07/16/19 05:33	1
Perfluorooctanesulfonamide (FOSA)	2.5		1.9	0.33	ng/L		07/15/19 05:24	07/16/19 05:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19	2.9	ng/L		07/15/19 05:24	07/16/19 05:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	6.8	J	19	1.8	ng/L		07/15/19 05:24	07/16/19 05:33	1
6:2 FTS	100		19	1.9	ng/L		07/15/19 05:24	07/16/19 05:33	1
8:2 FTS	27		19	1.9	ng/L		07/15/19 05:24	07/16/19 05:33	1
F-53B Major	ND		1.9	0.22	ng/L		07/15/19 05:24	07/16/19 05:33	1
HFPO-DA (GenX)	40		3.7	1.4	ng/L		07/15/19 05:24	07/16/19 05:33	1
F-53B Minor	ND		1.9	0.30	ng/L		07/15/19 05:24	07/16/19 05:33	1
DONA	ND		1.9	0.17	ng/L		07/15/19 05:24	07/16/19 05:33	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	84		25 - 150				07/15/19 05:24	07/16/19 05:33	1
13C5-PFPeA DNU	87		25 - 150				07/15/19 05:24	07/16/19 05:33	1
13C2 PFHxA	63		25 - 150				07/15/19 05:24	07/16/19 05:33	1
13C4 PFHpA	100		25 - 150				07/15/19 05:24	07/16/19 05:33	1
13C5 PFNA	105		25 - 150				07/15/19 05:24	07/16/19 05:33	1
13C2 PFDA	114		25 - 150				07/15/19 05:24	07/16/19 05:33	1
13C2 PFUnA	105		25 - 150				07/15/19 05:24	07/16/19 05:33	1
13C2 PFDaA	104		25 - 150				07/15/19 05:24	07/16/19 05:33	1
13C2 PFTeDA	103		25 - 150				07/15/19 05:24	07/16/19 05:33	1
13C3 PFBS	109		25 - 150				07/15/19 05:24	07/16/19 05:33	1
18O2 PFHxS	108		25 - 150				07/15/19 05:24	07/16/19 05:33	1
13C4 PFOS	112		25 - 150				07/15/19 05:24	07/16/19 05:33	1
13C8 FOSA	89		25 - 150				07/15/19 05:24	07/16/19 05:33	1
d3-NMeFOSAA	82		25 - 150				07/15/19 05:24	07/16/19 05:33	1
d5-NEtFOSAA	99		25 - 150				07/15/19 05:24	07/16/19 05:33	1
M2-6:2 FTS	102		25 - 150				07/15/19 05:24	07/16/19 05:33	1
M2-8:2 FTS	143		25 - 150				07/15/19 05:24	07/16/19 05:33	1
13C3 HFPO-DA	72		25 - 150				07/15/19 05:24	07/16/19 05:33	1

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1600		19	8.0	ng/L		07/15/19 05:24	07/19/19 21:52	10
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	93		25 - 150				07/15/19 05:24	07/19/19 21:52	10

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: Influent
Date Collected: 07/11/19 12:30
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-6
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	41		2.0	0.35	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluoropentanoic acid (PFPeA)	46		2.0	0.48	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluorohexanoic acid (PFHxA)	61		2.0	0.57	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluoroheptanoic acid (PFHpA)	54		2.0	0.25	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluorononanoic acid (PFNA)	59		2.0	0.27	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluorodecanoic acid (PFDA)	11		2.0	0.31	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluorotetradecanoic acid (PFTeA)	0.33 J		2.0	0.29	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluorobutanesulfonic acid (PFBS)	4.2		2.0	0.20	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluorohexanesulfonic acid (PFHxS)	16 B		2.0	0.17	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluoroheptanesulfonic Acid (PFHpS)	0.94 J		2.0	0.19	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluoroctanesulfonic acid (PFOS)	76		2.0	0.53	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L	07/15/19 05:24	07/16/19 05:57		1
Perfluoroctanesulfonamide (FOSA)	0.56 J		2.0	0.35	ng/L	07/15/19 05:24	07/16/19 05:57		1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L	07/15/19 05:24	07/16/19 05:57		1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	3.2 J		20	1.9	ng/L	07/15/19 05:24	07/16/19 05:57		1
6:2 FTS	97		20	2.0	ng/L	07/15/19 05:24	07/16/19 05:57		1
8:2 FTS	20		20	2.0	ng/L	07/15/19 05:24	07/16/19 05:57		1
F-53B Major	ND		2.0	0.24	ng/L	07/15/19 05:24	07/16/19 05:57		1
HFPO-DA (GenX)	55		3.9	1.5	ng/L	07/15/19 05:24	07/16/19 05:57		1
F-53B Minor	ND		2.0	0.32	ng/L	07/15/19 05:24	07/16/19 05:57		1
DONA	ND		2.0	0.18	ng/L	07/15/19 05:24	07/16/19 05:57		1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
13C4 PFBA	85		25 - 150			07/15/19 05:24	07/16/19 05:57		1
13C5-PFPeA DNU	89		25 - 150			07/15/19 05:24	07/16/19 05:57		1
13C2 PFHxA	94		25 - 150			07/15/19 05:24	07/16/19 05:57		1
13C4 PFHpA	102		25 - 150			07/15/19 05:24	07/16/19 05:57		1
13C5 PFNA	97		25 - 150			07/15/19 05:24	07/16/19 05:57		1
13C2 PFDA	100		25 - 150			07/15/19 05:24	07/16/19 05:57		1
13C2 PFUnA	96		25 - 150			07/15/19 05:24	07/16/19 05:57		1
13C2 PFDoA	95		25 - 150			07/15/19 05:24	07/16/19 05:57		1
13C2 PFTeDA	93		25 - 150			07/15/19 05:24	07/16/19 05:57		1
13C3 PFBS	98		25 - 150			07/15/19 05:24	07/16/19 05:57		1
18O2 PFHxS	103		25 - 150			07/15/19 05:24	07/16/19 05:57		1
13C4 PFOS	96		25 - 150			07/15/19 05:24	07/16/19 05:57		1
13C8 FOSA	78		25 - 150			07/15/19 05:24	07/16/19 05:57		1
d3-NMeFOSAA	87		25 - 150			07/15/19 05:24	07/16/19 05:57		1
d5-NEtFOSAA	87		25 - 150			07/15/19 05:24	07/16/19 05:57		1
M2-6:2 FTS	93		25 - 150			07/15/19 05:24	07/16/19 05:57		1
M2-8:2 FTS	103		25 - 150			07/15/19 05:24	07/16/19 05:57		1
13C3 HFPO-DA	72		25 - 150			07/15/19 05:24	07/16/19 05:57		1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: Influent
Date Collected: 07/11/19 12:30
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-6
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1500		20	8.4	ng/L		07/15/19 05:24	07/19/19 22:00	10
<i>Isotope Dilution</i>		%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C4 PFOA		88		25 - 150			07/15/19 05:24	07/19/19 22:00	10

Client Sample ID: MW-17-A

Date Collected: 07/11/19 13:49
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-7
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	290		1.8	0.25	ng/L		07/15/19 05:24	07/16/19 06:05	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		07/15/19 05:24	07/16/19 06:05	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.51	ng/L		07/15/19 05:24	07/16/19 06:05	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		07/15/19 05:24	07/16/19 06:05	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.27	ng/L		07/15/19 05:24	07/16/19 06:05	1
Perfluorobutanesulfonic acid (PFBS)	46		1.8	0.18	ng/L		07/15/19 05:24	07/16/19 06:05	1
Perfluorohexanesulfonic acid (PFHxS)	66	B	1.8	0.16	ng/L		07/15/19 05:24	07/16/19 06:05	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.9		1.8	0.18	ng/L		07/15/19 05:24	07/16/19 06:05	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29	ng/L		07/15/19 05:24	07/16/19 06:05	1
Perfluorooctanesulfonamide (FOSA)	5.0		1.8	0.32	ng/L		07/15/19 05:24	07/16/19 06:05	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.9	ng/L		07/15/19 05:24	07/16/19 06:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	3.3	J	18	1.8	ng/L		07/15/19 05:24	07/16/19 06:05	1
6:2 FTS	85		18	1.8	ng/L		07/15/19 05:24	07/16/19 06:05	1
8:2 FTS	31		18	1.8	ng/L		07/15/19 05:24	07/16/19 06:05	1
F-53B Major	ND		1.8	0.22	ng/L		07/15/19 05:24	07/16/19 06:05	1
F-53B Minor	ND		1.8	0.29	ng/L		07/15/19 05:24	07/16/19 06:05	1
DONA	ND		1.8	0.17	ng/L		07/15/19 05:24	07/16/19 06:05	1
<i>Isotope Dilution</i>		%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C5 PFNA		124		25 - 150			07/15/19 05:24	07/16/19 06:05	1
13C2 PFUnA		124		25 - 150			07/15/19 05:24	07/16/19 06:05	1
13C2 PFDoA		125		25 - 150			07/15/19 05:24	07/16/19 06:05	1
13C2 PFTeDA		125		25 - 150			07/15/19 05:24	07/16/19 06:05	1
13C3 PFBS		110		25 - 150			07/15/19 05:24	07/16/19 06:05	1
18O2 PFHxS		133		25 - 150			07/15/19 05:24	07/16/19 06:05	1
13C4 PFOS		130		25 - 150			07/15/19 05:24	07/16/19 06:05	1
13C8 FOSA		92		25 - 150			07/15/19 05:24	07/16/19 06:05	1
d3-NMeFOSAA		122		25 - 150			07/15/19 05:24	07/16/19 06:05	1
d5-NEtFOSAA		132		25 - 150			07/15/19 05:24	07/16/19 06:05	1
M2-6:2 FTS		125		25 - 150			07/15/19 05:24	07/16/19 06:05	1
M2-8:2 FTS		150		25 - 150			07/15/19 05:24	07/16/19 06:05	1

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	530		18	3.2	ng/L		07/15/19 05:24	07/19/19 22:08	10
Perfluoropentanoic acid (PPPeA)	710		18	4.5	ng/L		07/15/19 05:24	07/19/19 22:08	10

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: MW-17-A
Date Collected: 07/11/19 13:49
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-7
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2000		18	5.3	ng/L		07/15/19 05:24	07/19/19 22:08	10
Perfluoroheptanoic acid (PFHpA)	970		18	2.3	ng/L		07/15/19 05:24	07/19/19 22:08	10
Perfluorodecanoic acid (PFDA)	1400		18	2.9	ng/L		07/15/19 05:24	07/19/19 22:08	10
Perfluorooctanesulfonic acid (PFOS)	380		18	5.0	ng/L		07/15/19 05:24	07/19/19 22:08	10
HFPO-DA (GenX)	230		37	14	ng/L		07/15/19 05:24	07/19/19 22:08	10
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	80		25 - 150				07/15/19 05:24	07/19/19 22:08	10
13C5-PFPeA DNU	86		25 - 150				07/15/19 05:24	07/19/19 22:08	10
13C2 PFHxA	87		25 - 150				07/15/19 05:24	07/19/19 22:08	10
13C4 PFHpA	96		25 - 150				07/15/19 05:24	07/19/19 22:08	10
13C2 PFDA	100		25 - 150				07/15/19 05:24	07/19/19 22:08	10
13C4 PFOS	92		25 - 150				07/15/19 05:24	07/19/19 22:08	10
13C3 HFPO-DA	127		25 - 150				07/15/19 05:24	07/19/19 22:08	10

Method: 537 (modified) - Fluorinated Alkyl Substances - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	6700		92	39	ng/L		07/15/19 05:24	08/14/19 12:30	50
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	94		25 - 150				07/15/19 05:24	08/14/19 12:30	50

Client Sample ID: EB-2

Date Collected: 07/11/19 14:00
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-8

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9	0.33	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.46	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.55	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.80	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.25	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.27	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluorohexanesulfonic acid (PFHxS)	0.32	J B	1.9	0.16	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.51	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		07/15/19 05:24	07/19/19 21:28	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9	0.33	ng/L		07/15/19 05:24	07/19/19 21:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19	2.9	ng/L		07/15/19 05:24	07/19/19 21:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19	1.8	ng/L		07/15/19 05:24	07/19/19 21:28	1
6:2 FTS	ND		19	1.9	ng/L		07/15/19 05:24	07/19/19 21:28	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: EB-2

Date Collected: 07/11/19 14:00

Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-8

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
8:2 FTS	ND		19	1.9	ng/L		07/15/19 05:24	07/19/19 21:28	1
F-53B Major	ND		1.9	0.23	ng/L		07/15/19 05:24	07/19/19 21:28	1
HFPO-DA (GenX)	ND		3.8	1.4	ng/L		07/15/19 05:24	07/19/19 21:28	1
F-53B Minor	ND		1.9	0.30	ng/L		07/15/19 05:24	07/19/19 21:28	1
DONA	ND		1.9	0.17	ng/L		07/15/19 05:24	07/19/19 21:28	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	89		25 - 150				07/15/19 05:24	07/19/19 21:28	1
13C5-PFPeA DNU	88		25 - 150				07/15/19 05:24	07/19/19 21:28	1
13C2 PFHxA	90		25 - 150				07/15/19 05:24	07/19/19 21:28	1
13C4 PFHpA	91		25 - 150				07/15/19 05:24	07/19/19 21:28	1
13C4 PFOA	95		25 - 150				07/15/19 05:24	07/19/19 21:28	1
13C5 PFNA	101		25 - 150				07/15/19 05:24	07/19/19 21:28	1
13C2 PFDA	97		25 - 150				07/15/19 05:24	07/19/19 21:28	1
13C2 PFUnA	94		25 - 150				07/15/19 05:24	07/19/19 21:28	1
13C2 PFDoA	92		25 - 150				07/15/19 05:24	07/19/19 21:28	1
13C2 PFTeDA	98		25 - 150				07/15/19 05:24	07/19/19 21:28	1
13C3 PFBS	86		25 - 150				07/15/19 05:24	07/19/19 21:28	1
18O2 PFHxS	89		25 - 150				07/15/19 05:24	07/19/19 21:28	1
13C4 PFOS	92		25 - 150				07/15/19 05:24	07/19/19 21:28	1
13C8 FOSA	81		25 - 150				07/15/19 05:24	07/19/19 21:28	1
d3-NMeFOSAA	79		25 - 150				07/15/19 05:24	07/19/19 21:28	1
d5-NEtFOSAA	76		25 - 150				07/15/19 05:24	07/19/19 21:28	1
M2-6:2 FTS	113		25 - 150				07/15/19 05:24	07/19/19 21:28	1
M2-8:2 FTS	110		25 - 150				07/15/19 05:24	07/19/19 21:28	1
13C3 HFPO-DA	107		25 - 150				07/15/19 05:24	07/19/19 21:28	1

Client Sample ID: FB-2

Date Collected: 07/11/19 14:02

Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-9

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.8	0.31	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluoropentanoic acid (PFPeA)	ND		1.8	0.43	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.51	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.75	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.27	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.97	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.1	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluorohexanesulfonic acid (PFHxS)	0.26 J B		1.8	0.15	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluoroheptanesulfonic Acid (PFHxS)	ND		1.8	0.17	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluoroctanesulfonic acid (PFOS)	ND		1.8	0.48	ng/L		07/15/19 05:24	07/16/19 06:21	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.28	ng/L		07/15/19 05:24	07/16/19 06:21	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: FB-2

Date Collected: 07/11/19 14:02
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-9

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroctanesulfonamide (FOSA)	ND		1.8	0.31	ng/L	07/15/19 05:24	07/16/19 06:21		1
N-methylperfluoroctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.7	ng/L	07/15/19 05:24	07/16/19 06:21		1
N-ethylperfluoroctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	1.7	ng/L	07/15/19 05:24	07/16/19 06:21		1
6:2 FTS	ND		18	1.8	ng/L	07/15/19 05:24	07/16/19 06:21		1
8:2 FTS	ND		18	1.8	ng/L	07/15/19 05:24	07/16/19 06:21		1
F-53B Major	ND		1.8	0.21	ng/L	07/15/19 05:24	07/16/19 06:21		1
HFPO-DA (GenX)	ND		3.5	1.3	ng/L	07/15/19 05:24	07/16/19 06:21		1
F-53B Minor	ND		1.8	0.28	ng/L	07/15/19 05:24	07/16/19 06:21		1
DONA	ND		1.8	0.16	ng/L	07/15/19 05:24	07/16/19 06:21		1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	90		25 - 150				07/15/19 05:24	07/16/19 06:21	1
13C5-PFPeA DNU	91		25 - 150				07/15/19 05:24	07/16/19 06:21	1
13C2 PFHxA	95		25 - 150				07/15/19 05:24	07/16/19 06:21	1
13C4 PFHpA	98		25 - 150				07/15/19 05:24	07/16/19 06:21	1
13C4 PFOA	99		25 - 150				07/15/19 05:24	07/16/19 06:21	1
13C5 PFNA	93		25 - 150				07/15/19 05:24	07/16/19 06:21	1
13C2 PFDA	94		25 - 150				07/15/19 05:24	07/16/19 06:21	1
13C2 PFUnA	91		25 - 150				07/15/19 05:24	07/16/19 06:21	1
13C2 PFDoA	90		25 - 150				07/15/19 05:24	07/16/19 06:21	1
13C2 PFTeDA	93		25 - 150				07/15/19 05:24	07/16/19 06:21	1
13C3 PFBS	96		25 - 150				07/15/19 05:24	07/16/19 06:21	1
18O2 PFHxS	102		25 - 150				07/15/19 05:24	07/16/19 06:21	1
13C4 PFOS	95		25 - 150				07/15/19 05:24	07/16/19 06:21	1
13C8 FOSA	84		25 - 150				07/15/19 05:24	07/16/19 06:21	1
d3-NMeFOSAA	79		25 - 150				07/15/19 05:24	07/16/19 06:21	1
d5-NEtFOSAA	78		25 - 150				07/15/19 05:24	07/16/19 06:21	1
M2-6:2 FTS	99		25 - 150				07/15/19 05:24	07/16/19 06:21	1
M2-8:2 FTS	86		25 - 150				07/15/19 05:24	07/16/19 06:21	1
13C3 HFPO-DA	65		25 - 150				07/15/19 05:24	07/16/19 06:21	1

Client Sample ID: EB-3

Date Collected: 07/11/19 14:05
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-10

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.8	0.31	ng/L	07/15/19 05:24	07/16/19 06:29		1
Perfluoropentanoic acid (PFPeA)	ND		1.8	0.44	ng/L	07/15/19 05:24	07/16/19 06:29		1
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.52	ng/L	07/15/19 05:24	07/16/19 06:29		1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L	07/15/19 05:24	07/16/19 06:29		1
Perfluoroctanoic acid (PFOA)	ND		1.8	0.76	ng/L	07/15/19 05:24	07/16/19 06:29		1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L	07/15/19 05:24	07/16/19 06:29		1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L	07/15/19 05:24	07/16/19 06:29		1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98	ng/L	07/15/19 05:24	07/16/19 06:29		1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L	07/15/19 05:24	07/16/19 06:29		1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L	07/15/19 05:24	07/16/19 06:29		1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L	07/15/19 05:24	07/16/19 06:29		1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L	07/15/19 05:24	07/16/19 06:29		1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: EB-3

Date Collected: 07/11/19 14:05
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-10

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	0.24	J B	1.8	0.15	ng/L		07/15/19 05:24	07/16/19 06:29	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17	ng/L		07/15/19 05:24	07/16/19 06:29	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.48	ng/L		07/15/19 05:24	07/16/19 06:29	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.28	ng/L		07/15/19 05:24	07/16/19 06:29	1
Perfluorooctanesulfonamide (FOSA)	ND		1.8	0.31	ng/L		07/15/19 05:24	07/16/19 06:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.8	ng/L		07/15/19 05:24	07/16/19 06:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	1.7	ng/L		07/15/19 05:24	07/16/19 06:29	1
6:2 FTS	ND		18	1.8	ng/L		07/15/19 05:24	07/16/19 06:29	1
8:2 FTS	ND		18	1.8	ng/L		07/15/19 05:24	07/16/19 06:29	1
F-53B Major	ND		1.8	0.21	ng/L		07/15/19 05:24	07/16/19 06:29	1
HFPO-DA (GenX)	ND		3.6	1.3	ng/L		07/15/19 05:24	07/16/19 06:29	1
F-53B Minor	ND		1.8	0.28	ng/L		07/15/19 05:24	07/16/19 06:29	1
DONA	ND		1.8	0.16	ng/L		07/15/19 05:24	07/16/19 06:29	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	92		25 - 150				07/15/19 05:24	07/16/19 06:29	1
13C5-PFPeA DNU	95		25 - 150				07/15/19 05:24	07/16/19 06:29	1
13C2 PFHxA	100		25 - 150				07/15/19 05:24	07/16/19 06:29	1
13C4 PFHpA	103		25 - 150				07/15/19 05:24	07/16/19 06:29	1
13C4 PFOA	95		25 - 150				07/15/19 05:24	07/16/19 06:29	1
13C5 PFNA	96		25 - 150				07/15/19 05:24	07/16/19 06:29	1
13C2 PFDA	96		25 - 150				07/15/19 05:24	07/16/19 06:29	1
13C2 PFUnA	96		25 - 150				07/15/19 05:24	07/16/19 06:29	1
13C2 PFDoA	92		25 - 150				07/15/19 05:24	07/16/19 06:29	1
13C2 PFTeDA	97		25 - 150				07/15/19 05:24	07/16/19 06:29	1
13C3 PFBS	94		25 - 150				07/15/19 05:24	07/16/19 06:29	1
18O2 PFHxS	101		25 - 150				07/15/19 05:24	07/16/19 06:29	1
13C4 PFOS	98		25 - 150				07/15/19 05:24	07/16/19 06:29	1
13C8 FOSA	83		25 - 150				07/15/19 05:24	07/16/19 06:29	1
d3-NMeFOSAA	82		25 - 150				07/15/19 05:24	07/16/19 06:29	1
d5-NEtFOSAA	86		25 - 150				07/15/19 05:24	07/16/19 06:29	1
M2-6:2 FTS	91		25 - 150				07/15/19 05:24	07/16/19 06:29	1
M2-8:2 FTS	78		25 - 150				07/15/19 05:24	07/16/19 06:29	1
13C3 HFPO-DA	71		25 - 150				07/15/19 05:24	07/16/19 06:29	1

Client Sample ID: MW-4-B

Date Collected: 07/11/19 16:11
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-11

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	100		1.9	0.33	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluoropentanoic acid (PFPeA)	210		1.9	0.46	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluoroheptanoic acid (PFHpA)	95		1.9	0.24	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluorooctanoic acid (PFOA)	160		1.9	0.80	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluorononanoic acid (PFNA)	31		1.9	0.26	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluorodecanoic acid (PFDA)	37		1.9	0.29	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		07/15/19 05:24	07/16/19 06:37	1

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Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: MW-4-B
Date Collected: 07/11/19 16:11
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-11
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.27	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluorobutanesulfonic acid (PFBS)	3.6		1.9	0.19	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluorohexanesulfonic acid (PFHxS)	30 B		1.9	0.16	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluoroheptanesulfonic Acid (PFHpS)	3.0		1.9	0.18	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluoroctanesulfonic acid (PFOS)	290		1.9	0.51	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		07/15/19 05:24	07/16/19 06:37	1
Perfluoroctanesulfonamide (FOSA)	0.68 J		1.9	0.33	ng/L		07/15/19 05:24	07/16/19 06:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19	2.9	ng/L		07/15/19 05:24	07/16/19 06:37	1
N-Ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	28		19	1.8	ng/L		07/15/19 05:24	07/16/19 06:37	1
F-53B Major	ND		1.9	0.23	ng/L		07/15/19 05:24	07/16/19 06:37	1
HFPO-DA (GenX)	30		3.8	1.4	ng/L		07/15/19 05:24	07/16/19 06:37	1
F-53B Minor	ND		1.9	0.30	ng/L		07/15/19 05:24	07/16/19 06:37	1
DONA	ND		1.9	0.17	ng/L		07/15/19 05:24	07/16/19 06:37	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFBA	69		25 - 150				07/15/19 05:24	07/16/19 06:37	1
13C5-PFPeA DNU	59		25 - 150				07/15/19 05:24	07/16/19 06:37	1
13C4 PFHpA	38		25 - 150				07/15/19 05:24	07/16/19 06:37	1
13C4 PFOA	95		25 - 150				07/15/19 05:24	07/16/19 06:37	1
13C5 PFNA	92		25 - 150				07/15/19 05:24	07/16/19 06:37	1
13C2 PFDA	119		25 - 150				07/15/19 05:24	07/16/19 06:37	1
13C2 PFUnA	81		25 - 150				07/15/19 05:24	07/16/19 06:37	1
13C2 PFDoA	62		25 - 150				07/15/19 05:24	07/16/19 06:37	1
13C2 PFTeDA	103		25 - 150				07/15/19 05:24	07/16/19 06:37	1
13C3 PFBS	93		25 - 150				07/15/19 05:24	07/16/19 06:37	1
18O2 PFHxS	70		25 - 150				07/15/19 05:24	07/16/19 06:37	1
13C4 PFOS	106		25 - 150				07/15/19 05:24	07/16/19 06:37	1
13C8 FOSA	64		25 - 150				07/15/19 05:24	07/16/19 06:37	1
d3-NMeFOSAA	54		25 - 150				07/15/19 05:24	07/16/19 06:37	1
d5-NEtFOSAA	57		25 - 150				07/15/19 05:24	07/16/19 06:37	1
13C3 HFPO-DA	52		25 - 150				07/15/19 05:24	07/16/19 06:37	1

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	420		19	5.5	ng/L		07/15/19 05:24	07/19/19 22:16	10
6:2 FTS	2800		190	19	ng/L		07/15/19 05:24	07/19/19 22:16	10
8:2 FTS	ND		190	19	ng/L		07/15/19 05:24	07/19/19 22:16	10
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFHxA	68		25 - 150				07/15/19 05:24	07/19/19 22:16	10
M2-6:2 FTS	170 *		25 - 150				07/15/19 05:24	07/19/19 22:16	10
M2-8:2 FTS	163 *		25 - 150				07/15/19 05:24	07/19/19 22:16	10

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: PFAS-SS-01
Date Collected: 07/11/19 09:33
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-12
Matrix: Solid
Percent Solids: 92.2

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.11	J	0.22	0.031	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluoropentanoic acid (PFPeA)	0.18	J	0.22	0.085	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.046	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.032	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluorooctanoic acid (PFOA)	0.22	I	0.22	0.094	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.040	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.024	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.040	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.074	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.056	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.059	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.027	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluorohexanesulfonic acid (PFHxS)	0.034	J	0.22	0.034	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		0.22	0.038	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.55	0.22	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.22	0.043	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Perfluorooctanesulfonamide (FOSA)	ND		0.22	0.090	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.43	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.41	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
6:2 FTS	ND		2.2	0.16	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
8:2 FTS	ND		2.2	0.27	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
F-53B Major	ND		0.22	0.030	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
HFPO-DA (GenX)	0.28		0.27	0.12	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
F-53B Minor	ND		0.22	0.024	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
DONA	ND		0.22	0.020	ug/Kg	⌚	07/17/19 12:03	07/19/19 15:12	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
13C4 PFBA	82		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
13C5-PFPeA DNU	94		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
13C2 PFHxA	95		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
13C4 PFHpA	100		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
13C4 PFOA	98		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
13C5 PFNA	102		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
13C2 PFDA	107		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
13C2 PFUnA	95		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
13C2 PFDoA	65		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
13C2 PFTeDA	77		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
13C3 PFBS	93		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
18O2 PFHxS	93		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
13C4 PFOS	92		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
13C8 FOSA	82		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
d3-NMeFOSAA	101		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
d5-NEtFOSAA	77		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
M2-6:2 FTS	158	*	25 - 150			07/17/19 12:03	07/19/19 15:12	1	
M2-8:2 FTS	136		25 - 150			07/17/19 12:03	07/19/19 15:12	1	
13C3 HFPO-DA	90		25 - 150			07/17/19 12:03	07/19/19 15:12	1	

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Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: PFAS-SS-01
Date Collected: 07/11/19 09:33
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-12
Matrix: Solid
Percent Solids: 92.2

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.8		0.1	0.1	%		07/16/19 17:18	07/16/19 17:18	1
Percent Solids	92.2		0.1	0.1	%		07/16/19 17:18	07/16/19 17:18	1

Client Sample ID: PFAS-SS-10

Date Collected: 07/11/19 00:00
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-13
Matrix: Solid
Percent Solids: 91.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.053	J	0.22	0.030	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluoropentanoic acid (PFPeA)	0.098	J	0.22	0.083	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.045	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.031	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluoroctanoic acid (PFOA)	0.21	J I	0.22	0.093	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.039	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.024	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.039	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.072	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.055	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.058	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.027	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.033	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		0.22	0.038	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluoroctanesulfonic acid (PFOS)	ND		0.54	0.22	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.22	0.042	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
Perfluoroctanesulfonamide (FOSA)	ND		0.22	0.088	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.42	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.40	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
6:2 FTS	ND		2.2	0.16	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
8:2 FTS	ND		2.2	0.27	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
F-53B Major	ND		0.22	0.029	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
HFPO-DA (GenX)	0.35		0.27	0.12	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
F-53B Minor	ND		0.22	0.024	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1
DONA	ND		0.22	0.019	ug/Kg	✉	07/17/19 12:03	07/19/19 15:20	1

Isotope Dilution

	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	86		25 - 150	07/17/19 12:03	07/19/19 15:20	1
13C5-PFPeA DNU	98		25 - 150	07/17/19 12:03	07/19/19 15:20	1
13C2 PFHxA	100		25 - 150	07/17/19 12:03	07/19/19 15:20	1
13C4 PFHpA	104		25 - 150	07/17/19 12:03	07/19/19 15:20	1
13C4 PFOA	100		25 - 150	07/17/19 12:03	07/19/19 15:20	1
13C5 PFNA	105		25 - 150	07/17/19 12:03	07/19/19 15:20	1
13C2 PFDA	107		25 - 150	07/17/19 12:03	07/19/19 15:20	1
13C2 PFUnA	91		25 - 150	07/17/19 12:03	07/19/19 15:20	1
13C2 PFDoA	71		25 - 150	07/17/19 12:03	07/19/19 15:20	1
13C2 PFTeDA	87		25 - 150	07/17/19 12:03	07/19/19 15:20	1
13C3 PFBS	98		25 - 150	07/17/19 12:03	07/19/19 15:20	1
18O2 PFHxS	95		25 - 150	07/17/19 12:03	07/19/19 15:20	1

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Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: PFAS-SS-10

Date Collected: 07/11/19 00:00

Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-13

Matrix: Solid

Percent Solids: 91.0

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	95		25 - 150	07/17/19 12:03	07/19/19 15:20	1
13C8 FOSA	82		25 - 150	07/17/19 12:03	07/19/19 15:20	1
d3-NMeFOSAA	92		25 - 150	07/17/19 12:03	07/19/19 15:20	1
d5-NEtFOSAA	72		25 - 150	07/17/19 12:03	07/19/19 15:20	1
M2-6:2 FTS	159 *		25 - 150	07/17/19 12:03	07/19/19 15:20	1
M2-8:2 FTS	132		25 - 150	07/17/19 12:03	07/19/19 15:20	1
13C3 HFPO-DA	108		25 - 150	07/17/19 12:03	07/19/19 15:20	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.0		0.1	0.1	%			07/15/19 19:11	1
Percent Solids	91.0		0.1	0.1	%			07/15/19 19:11	1

Client Sample ID: PFAS-SS-04

Date Collected: 07/11/19 10:58

Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-14

Matrix: Solid

Percent Solids: 92.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.035	J	0.22	0.030	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluoropentanoic acid (PFPeA)	ND		0.22	0.084	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.046	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluoroheptanoic acid (PFHpA)	0.038	J	0.22	0.032	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluoroctanoic acid (PFOA)	0.19	J	0.22	0.094	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.039	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluorodecanoic acid (PFDA)	0.095	J	0.22	0.024	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.039	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluorododecanoic acid (PFDoA)	4.1		0.22	0.073	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.055	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.059	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.027	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.034	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		0.22	0.038	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluoroctanesulfonic acid (PFOS)	ND		0.54	0.22	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.22	0.042	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Perfluoroctanesulfonamide (FOSA)	0.18	J	0.22	0.089	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.42	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.40	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
6:2 FTS	ND		2.2	0.16	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
8:2 FTS	ND		2.2	0.27	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
F-53B Major	ND		0.22	0.029	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
HFPO-DA (GenX)	0.15	J	0.27	0.12	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
F-53B Minor	ND		0.22	0.024	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
DONA	ND		0.22	0.020	ug/Kg	⊗	07/17/19 12:03	07/19/19 15:28	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFBA	95		25 - 150	07/17/19 12:03	07/19/19 15:28	1			

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Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: PFAS-SS-04

Date Collected: 07/11/19 10:58
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-14

Matrix: Solid

Percent Solids: 92.7

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5-PFPeA DNU	107		25 - 150	07/17/19 12:03	07/19/19 15:28	1
13C2 PFHxA	101		25 - 150	07/17/19 12:03	07/19/19 15:28	1
13C4 PFHpA	108		25 - 150	07/17/19 12:03	07/19/19 15:28	1
13C4 PFOA	103		25 - 150	07/17/19 12:03	07/19/19 15:28	1
13C5 PFNA	112		25 - 150	07/17/19 12:03	07/19/19 15:28	1
13C2 PFDA	108		25 - 150	07/17/19 12:03	07/19/19 15:28	1
13C2 PFUnA	103		25 - 150	07/17/19 12:03	07/19/19 15:28	1
13C2 PFDoA	91		25 - 150	07/17/19 12:03	07/19/19 15:28	1
13C2 PFTeDA	111		25 - 150	07/17/19 12:03	07/19/19 15:28	1
13C3 PFBS	101		25 - 150	07/17/19 12:03	07/19/19 15:28	1
18O2 PFHxS	96		25 - 150	07/17/19 12:03	07/19/19 15:28	1
13C4 PFOS	96		25 - 150	07/17/19 12:03	07/19/19 15:28	1
13C8 FOSA	85		25 - 150	07/17/19 12:03	07/19/19 15:28	1
d3-NMeFOSAA	91		25 - 150	07/17/19 12:03	07/19/19 15:28	1
d5-NEtFOSAA	76		25 - 150	07/17/19 12:03	07/19/19 15:28	1
M2-6:2 FTS	138		25 - 150	07/17/19 12:03	07/19/19 15:28	1
M2-8:2 FTS	129		25 - 150	07/17/19 12:03	07/19/19 15:28	1
13C3 HFPO-DA	87		25 - 150	07/17/19 12:03	07/19/19 15:28	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.3		0.1	0.1	%			07/16/19 17:18	1
Percent Solids	92.7		0.1	0.1	%			07/16/19 17:18	1

Client Sample ID: PFAS-SS-02

Date Collected: 07/11/19 13:15
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-15

Matrix: Solid

Percent Solids: 88.3

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.52		0.23	0.032	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluoropentanoic acid (PFPeA)	0.26		0.23	0.088	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.048	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.033	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluorooctanoic acid (PFOA)	1.3		0.23	0.098	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.041	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluorodecanoic acid (PFDA)	0.36		0.23	0.025	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluoroundecanoic acid (PFUnA)	0.54		0.23	0.041	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluorododecanoic acid (PFDoA)	0.73		0.23	0.076	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.058	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluorotetradecanoic acid (PFTeA)	0.88		0.23	0.061	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluorobutanesulfonic acid (PFBS)	0.052 J		0.23	0.028	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluorohexanesulfonic acid (PFHxS)	1.2		0.23	0.035	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluoroheptanesulfonic Acid (PFHxS)	ND		0.23	0.040	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1
Perfluorooctanesulfonic acid (PFOS)	4.2		0.57	0.23	ug/Kg	✉	07/17/19 12:03	07/23/19 16:56	1

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Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: PFAS-SS-02
Date Collected: 07/11/19 13:15
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-15
Matrix: Solid
Percent Solids: 88.3

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	ND		0.23	0.044	ug/Kg	⊗	07/17/19 12:03	07/23/19 16:56	1
Perfluoroctanesulfonamide (FOSA)	0.18	J	0.23	0.093	ug/Kg	⊗	07/17/19 12:03	07/23/19 16:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.3	0.44	ug/Kg	⊗	07/17/19 12:03	07/23/19 16:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.3	0.42	ug/Kg	⊗	07/17/19 12:03	07/23/19 16:56	1
6:2 FTS	ND		2.3	0.17	ug/Kg	⊗	07/17/19 12:03	07/23/19 16:56	1
8:2 FTS	ND		2.3	0.28	ug/Kg	⊗	07/17/19 12:03	07/23/19 16:56	1
F-53B Major	ND		0.23	0.031	ug/Kg	⊗	07/17/19 12:03	07/23/19 16:56	1
HFPO-DA (GenX)	ND		0.28	0.13	ug/Kg	⊗	07/17/19 12:03	07/23/19 16:56	1
F-53B Minor	ND		0.23	0.025	ug/Kg	⊗	07/17/19 12:03	07/23/19 16:56	1
DONA	ND		0.23	0.020	ug/Kg	⊗	07/17/19 12:03	07/23/19 16:56	1

<i>Isotope Dilution</i>	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	140		25 - 150	07/17/19 12:03	07/23/19 16:56	1
13C5-PFPeA DNU	109		25 - 150	07/17/19 12:03	07/23/19 16:56	1
13C2 PFHxA	111		25 - 150	07/17/19 12:03	07/23/19 16:56	1
13C4 PFHpA	116		25 - 150	07/17/19 12:03	07/23/19 16:56	1
13C4 PFOA	106		25 - 150	07/17/19 12:03	07/23/19 16:56	1
13C5 PFNA	70		25 - 150	07/17/19 12:03	07/23/19 16:56	1
13C2 PFDA	62		25 - 150	07/17/19 12:03	07/23/19 16:56	1
13C2 PFUnA	83		25 - 150	07/17/19 12:03	07/23/19 16:56	1
13C2 PFDoA	84		25 - 150	07/17/19 12:03	07/23/19 16:56	1
13C2 PFTeDA	92		25 - 150	07/17/19 12:03	07/23/19 16:56	1
13C3 PFBS	145		25 - 150	07/17/19 12:03	07/23/19 16:56	1
18O2 PFHxS	139		25 - 150	07/17/19 12:03	07/23/19 16:56	1
13C4 PFOS	120		25 - 150	07/17/19 12:03	07/23/19 16:56	1
13C8 FOSA	35		25 - 150	07/17/19 12:03	07/23/19 16:56	1
d3-NMeFOSAA	95		25 - 150	07/17/19 12:03	07/23/19 16:56	1
d5-NEtFOSAA	81		25 - 150	07/17/19 12:03	07/23/19 16:56	1
M2-6:2 FTS	159 *		25 - 150	07/17/19 12:03	07/23/19 16:56	1
M2-8:2 FTS	102		25 - 150	07/17/19 12:03	07/23/19 16:56	1
13C3 HFPO-DA	87		25 - 150	07/17/19 12:03	07/23/19 16:56	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.7		0.1	0.1	%			07/16/19 17:18	1
Percent Solids	88.3		0.1	0.1	%			07/16/19 17:18	1

Client Sample ID: PFAS-SS-03

Date Collected: 07/11/19 15:45
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-16
Matrix: Solid
Percent Solids: 88.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.033	J	0.23	0.032	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluoropentanoic acid (PFPeA)	ND		0.23	0.087	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.048	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.033	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.098	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.041	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1

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Client Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: PFAS-SS-03
Date Collected: 07/11/19 15:45
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-16
Matrix: Solid
Percent Solids: 88.5

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	0.066	J	0.23	0.025	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluoroundecanoic acid (PFUnA)	0.31		0.23	0.041	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluorododecanoic acid (PFDa)	0.078	J	0.23	0.076	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.058	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.061	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.028	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluorohexanesulfonic acid (PFHxS)	0.12	J	0.23	0.035	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluoroheptanesulfonic Acid (PFHxS)	ND		0.23	0.040	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluorooctanesulfonic acid (PFOS)	0.40	J	0.57	0.23	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.23	0.044	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Perfluorooctanesulfonamide (FOSA)	ND		0.23	0.093	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.3	0.44	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.3	0.42	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
6:2 FTS	ND		2.3	0.17	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
8:2 FTS	ND		2.3	0.28	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
F-53B Major	ND		0.23	0.031	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
HFPO-DA (GenX)	ND		0.28	0.12	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
F-53B Minor	ND		0.23	0.025	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
DONA	ND		0.23	0.020	ug/Kg	⊗	07/17/19 12:03	07/19/19 16:00	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	98		25 - 150				07/17/19 12:03	07/19/19 16:00	1
13C5-PFPeA DNU	96		25 - 150				07/17/19 12:03	07/19/19 16:00	1
13C2 PFHxA	95		25 - 150				07/17/19 12:03	07/19/19 16:00	1
13C4 PFHpA	106		25 - 150				07/17/19 12:03	07/19/19 16:00	1
13C4 PFOA	100		25 - 150				07/17/19 12:03	07/19/19 16:00	1
13C5 PFNA	101		25 - 150				07/17/19 12:03	07/19/19 16:00	1
13C2 PFDA	97		25 - 150				07/17/19 12:03	07/19/19 16:00	1
13C2 PFUnA	98		25 - 150				07/17/19 12:03	07/19/19 16:00	1
13C2 PFDoA	100		25 - 150				07/17/19 12:03	07/19/19 16:00	1
13C2 PFTeDA	114		25 - 150				07/17/19 12:03	07/19/19 16:00	1
13C3 PFBS	99		25 - 150				07/17/19 12:03	07/19/19 16:00	1
18O2 PFHxS	99		25 - 150				07/17/19 12:03	07/19/19 16:00	1
13C4 PFOS	94		25 - 150				07/17/19 12:03	07/19/19 16:00	1
13C8 FOSA	81		25 - 150				07/17/19 12:03	07/19/19 16:00	1
d3-NMeFOSAA	82		25 - 150				07/17/19 12:03	07/19/19 16:00	1
d5-NEtFOSAA	79		25 - 150				07/17/19 12:03	07/19/19 16:00	1
M2-6:2 FTS	135		25 - 150				07/17/19 12:03	07/19/19 16:00	1
M2-8:2 FTS	122		25 - 150				07/17/19 12:03	07/19/19 16:00	1
13C3 HFPO-DA	100		25 - 150				07/17/19 12:03	07/19/19 16:00	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.5		0.1	0.1	%			07/16/19 17:18	1
Percent Solids	88.5		0.1	0.1	%			07/16/19 17:18	1

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (25-150)	PPPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-52224-12	PFAS-SS-01	82	94	95	100	98	102	107	95
320-52224-13	PFAS-SS-10	86	98	100	104	100	105	107	91
320-52224-14	PFAS-SS-04	95	107	101	108	103	112	108	103
320-52224-15	PFAS-SS-02	140	109	111	116	106	70	62	83
320-52224-16	PFAS-SS-03	98	96	95	106	100	101	97	98
LCS 320-308297/2-A	Lab Control Sample	82	78	83	90	85	86	82	83
MB 320-308297/1-A	Method Blank	89	86	89	104	93	99	91	89
Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA (25-150)	PFTDA (25-150)	3C3-PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3-NMeFOSAA (25-150)	d5-NEtFOSAA (25-150)
320-52224-12	PFAS-SS-01	65	77	93	93	92	82	101	77
320-52224-13	PFAS-SS-10	71	87	98	95	95	82	92	72
320-52224-14	PFAS-SS-04	91	111	101	96	96	85	91	76
320-52224-15	PFAS-SS-02	84	92	145	139	120	35	95	81
320-52224-16	PFAS-SS-03	100	114	99	99	94	81	82	79
LCS 320-308297/2-A	Lab Control Sample	82	90	81	80	79	67	68	69
MB 320-308297/1-A	Method Blank	90	103	89	91	86	79	77	74
Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		M262FTS (25-150)	M282FTS (25-150)	HFPODA (25-150)					
320-52224-12	PFAS-SS-01	158 *	136	90					
320-52224-13	PFAS-SS-10	159 *	132	108					
320-52224-14	PFAS-SS-04	138	129	87					
320-52224-15	PFAS-SS-02	159 *	102	87					
320-52224-16	PFAS-SS-03	135	122	100					
LCS 320-308297/2-A	Lab Control Sample	106	89	93					
MB 320-308297/1-A	Method Blank	113	102	115					

Surrogate Legend

PFBA = 13C4 PFBA
 PFPeA = 13C5-PFPeA DNU
 PFHxA = 13C2 PFHxA
 PFHpA = 13C4 PFHpA
 PFOA = 13C4 PFOA
 PFNA = 13C5 PFNA
 PFDA = 13C2 PFDA
 PFUnA = 13C2 PFUnA
 PFDoA = 13C2 PFDoA
 PFTDA = 13C2 PFTDA
 13C3-PFBS = 13C3 PFBS
 PFHxS = 18O2 PFHxS
 PFOS = 13C4 PFOS
 PFOSA = 13C8 FOSA
 d3-NMeFOSAA = d3-NMeFOSAA
 d5-NEtFOSAA = d5-NEtFOSAA
 M262FTS = M2-6:2 FTS
 M282FTS = M2-8:2 FTS
 HFPODA = 13C3 HFPO-DA

Isotope Dilution Summary

Client: Leppert Associates Inc

Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-52224-1	MW-4-A	65	73	89	95	95	89	95	96
320-52224-2	MW-14-A	62	71	82	95	90	89	95	91
320-52224-3	MW-88-5-WT	71	75	87	90		86	91	82
320-52224-3 - DL	MW-88-5-WT					81			
320-52224-4	Effluent	82	91	95	109		101	105	100
320-52224-4 - DL	Effluent					92			
320-52224-5	22-D	84	87	63	100		105	114	105
320-52224-5 - DL	22-D					93			
320-52224-6	Influent	85	89	94	102		97	100	96
320-52224-6 - DL	Influent					88			
320-52224-7	MW-17-A						124		124
320-52224-7 - DL	MW-17-A	80	86	87	96			100	
320-52224-7 - DL2	MW-17-A					94			
320-52224-8	EB-2	89	88	90	91	95	101	97	94
320-52224-9	FB-2	90	91	95	98	99	93	94	91
320-52224-10	EB-3	92	95	100	103	95	96	96	96
320-52224-11	MW-4-B	69	59		38	95	92	119	81
320-52224-11 - DL	MW-4-B			68					
LCS 320-307651/2-A	Lab Control Sample	89	93	90	98	94	89	91	90
LCSD 320-307651/3-A	Lab Control Sample Dup	91	96	96	98	96	93	95	92
MB 320-307651/1-A	Method Blank	88	92	93	95	93	91	88	93
Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA (25-150)	PFTDA (25-150)	3C3-PFB S (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOSA (25-150)	-NEtFOSA (25-150)
320-52224-1	MW-4-A	93	100	90	103	98	82	91	93
320-52224-2	MW-14-A	92	99	91	98	95	83	87	86
320-52224-3	MW-88-5-WT	77	85	89	97	90	69	50	80
320-52224-3 - DL	MW-88-5-WT								
320-52224-4	Effluent	94	94	98	110	104	84	87	89
320-52224-4 - DL	Effluent								
320-52224-5	22-D	104	103	109	108	112	89	82	99
320-52224-5 - DL	22-D								
320-52224-6	Influent	95	93	98	103	96	78	87	87
320-52224-6 - DL	Influent								
320-52224-7	MW-17-A	125	125	110	133	130	92	122	132
320-52224-7 - DL	MW-17-A					92			
320-52224-7 - DL2	MW-17-A								
320-52224-8	EB-2	92	98	86	89	92	81	79	76
320-52224-9	FB-2	90	93	96	102	95	84	79	78
320-52224-10	EB-3	92	97	94	101	98	83	82	86
320-52224-11	MW-4-B	62	103	93	70	106	64	54	57
320-52224-11 - DL	MW-4-B								
LCS 320-307651/2-A	Lab Control Sample	91	92	91	95	93	77	78	82
LCSD 320-307651/3-A	Lab Control Sample Dup	96	95	93	97	93	76	80	87
MB 320-307651/1-A	Method Blank	89	91	91	98	98	78	76	83
Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		M262FTS (25-150)	M282FTS (25-150)	HFPODA (25-150)					
320-52224-1	MW-4-A	137	120	68					

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Isotope Dilution Summary

Client: Leppert Associates Inc

Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)		
		M262FTS (25-150)	M282FTS (25-150)	HFPEDA (25-150)
320-52224-2	MW-14-A	144	117	66
320-52224-3	MW-88-5-WT	91	88	69
320-52224-3 - DL	MW-88-5-WT			
320-52224-4	Effluent	96	102	74
320-52224-4 - DL	Effluent			
320-52224-5	22-D	102	143	72
320-52224-5 - DL	22-D			
320-52224-6	Influent	93	103	72
320-52224-6 - DL	Influent			
320-52224-7	MW-17-A	125	150	
320-52224-7 - DL	MW-17-A			127
320-52224-7 - DL2	MW-17-A			
320-52224-8	EB-2	113	110	107
320-52224-9	FB-2	99	86	65
320-52224-10	EB-3	91	78	71
320-52224-11	MW-4-B			52
320-52224-11 - DL	MW-4-B	170 *	163 *	
LCS 320-307651/2-A	Lab Control Sample	88	73	80
LCSD 320-307651/3-A	Lab Control Sample Dup	88	82	72
MB 320-307651/1-A	Method Blank	96	80	79

Surrogate Legend

PFBA = 13C4 PFBA

PPPeA = 13C5-PFPeA DNU

PFHxA = 13C2 PFHxA

PFHpA = 13C4 PFHpA

PFOA = 13C4 PFOA

PFNA = 13C5 PFNA

PFDA = 13C2 PFDA

PFUnA = 13C2 PFUnA

PFDoA = 13C2 PFDoA

PFTDA = 13C2 PFTeDA

13C3-PFBS = 13C3 PFBS

PFHxS = 18O2 PFHxS

PFOS = 13C4 PFOS

PFOSA = 13C8 FOSA

d3-NMeFOSAA = d3-NMeFOSAA

d5-NEtFOSAA = d5-NEtFOSAA

M262FTS = M2-6:2 FTS

M282FTS = M2-8:2 FTS

HFPEDA = 13C3 HFPO-DA

QC Sample Results

Client: Leppert Associates Inc

Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-307651/1-A

Matrix: Water

Analysis Batch: 307900

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 307651

Analyte	MB	MB	Dil Fac						
	Result	Qualifier		RL	MDL	Unit	D	Prepared	Analyzed
Perfluorobutanoic acid (PFBA)	ND		1	2.0	0.35	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluoropentanoic acid (PFPeA)	ND		1	2.0	0.49	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluorohexanoic acid (PFHxA)	ND		1	2.0	0.58	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluoroheptanoic acid (PFHpA)	ND		1	2.0	0.25	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluorooctanoic acid (PFOA)	ND		1	2.0	0.85	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluorononanoic acid (PFNA)	ND		1	2.0	0.27	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluorodecanoic acid (PFDA)	ND		1	2.0	0.31	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluoroundecanoic acid (PFUnA)	ND		1	2.0	1.1	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluorododecanoic acid (PFDaO)	ND		1	2.0	0.55	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluorotridecanoic acid (PFTriA)	ND		1	2.0	1.3	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluorotetradecanoic acid (PFTeA)	ND		1	2.0	0.29	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluorobutanesulfonic acid (PFBS)	ND		1	2.0	0.20	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluorohexanesulfonic acid (PFHxS)	0.267	J	1	2.0	0.17	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1	2.0	0.19	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluorooctanesulfonic acid (PFOS)	ND		1	2.0	0.54	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluorodecanesulfonic acid (PFDS)	ND		1	2.0	0.32	ng/L	07/15/19 05:24	07/16/19 04:37	
Perfluorooctanesulfonamide (FOSA)	ND		1	2.0	0.35	ng/L	07/15/19 05:24	07/16/19 04:37	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1	20	3.1	ng/L	07/15/19 05:24	07/16/19 04:37	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1	20	1.9	ng/L	07/15/19 05:24	07/16/19 04:37	
6:2 FTS	ND		1	20	2.0	ng/L	07/15/19 05:24	07/16/19 04:37	
8:2 FTS	ND		1	20	2.0	ng/L	07/15/19 05:24	07/16/19 04:37	
F-53B Major	ND		1	2.0	0.24	ng/L	07/15/19 05:24	07/16/19 04:37	
HFPO-DA (GenX)	ND		1	4.0	1.5	ng/L	07/15/19 05:24	07/16/19 04:37	
F-53B Minor	ND		1	2.0	0.32	ng/L	07/15/19 05:24	07/16/19 04:37	
DONA	ND		1	2.0	0.18	ng/L	07/15/19 05:24	07/16/19 04:37	

Isotope Dilution	MB	MB	Dil Fac				
	%Recovery	Qualifier		Limits	Prepared	Analyzed	
13C4 PFBA	88		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
13C5-PFPeA DNU	92		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
13C2 PFHxA	93		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
13C4 PFHpA	95		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
13C4 PFOA	93		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
13C5 PFNA	91		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
13C2 PFDA	88		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
13C2 PFUnA	93		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
13C2 PFDaO	89		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
13C2 PFTeDA	91		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
13C3 PFBS	91		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
18O2 PFHxS	98		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
13C4 PFOS	98		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
13C8 FOSA	78		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
d3-NMeFOSAA	76		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
d5-NEtFOSAA	83		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
M2-6:2 FTS	96		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
M2-8:2 FTS	80		1	25 - 150	07/15/19 05:24	07/16/19 04:37	
13C3 HFPO-DA	79		1	25 - 150	07/15/19 05:24	07/16/19 04:37	

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QC Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-307651/2-A

Matrix: Water

Analysis Batch: 307900

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 307651

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
Perfluorobutanoic acid (PFBA)	40.0	43.4		ng/L		108	70 - 130	
Perfluoropentanoic acid (PFPeA)	40.0	38.8		ng/L		97	66 - 126	
Perfluorohexanoic acid (PFHxA)	40.0	43.5		ng/L		109	66 - 126	
Perfluoroheptanoic acid (PFHpA)	40.0	41.6		ng/L		104	66 - 126	
Perfluorooctanoic acid (PFOA)	40.0	43.9		ng/L		110	64 - 124	
Perfluorononanoic acid (PFNA)	40.0	44.8		ng/L		112	68 - 128	
Perfluorodecanoic acid (PFDA)	40.0	41.6		ng/L		104	69 - 129	
Perfluoroundecanoic acid (PFUnA)	40.0	40.7		ng/L		102	60 - 120	
Perfluorododecanoic acid (PFDa)	40.0	41.7		ng/L		104	71 - 131	
Perfluorotridecanoic acid (PFTriA)	40.0	42.0		ng/L		105	72 - 132	
Perfluorotetradecanoic acid (PFTeA)	40.0	40.2		ng/L		100	68 - 128	
Perfluorobutanesulfonic acid (PFBS)	35.4	38.5		ng/L		109	73 - 133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.4		ng/L		97	63 - 123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128	
Perfluorooctanesulfonic acid (PFOS)	37.1	36.0		ng/L		97	67 - 127	
Perfluorodecanesulfonic acid (PFDS)	38.6	39.0		ng/L		101	68 - 128	
Perfluorooctanesulfonamide (FOSA)	40.0	44.9		ng/L		112	70 - 130	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.0		ng/L		100	67 - 127	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	40.9		ng/L		102	65 - 125	
6:2 FTS	37.9	41.2		ng/L		109	66 - 126	
8:2 FTS	38.3	43.7		ng/L		114	67 - 127	
F-53B Major	37.3	39.6		ng/L		106	70 - 130	
HFPO-DA (GenX)	40.0	45.9		ng/L		115	70 - 130	
F-53B Minor	37.7	38.9		ng/L		103	70 - 130	
DONA	37.7	40.5		ng/L		107	70 - 130	

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	89		25 - 150
13C5-PFPeA DNU	93		25 - 150
13C2 PFHxA	90		25 - 150
13C4 PFHpA	98		25 - 150
13C4 PFOA	94		25 - 150
13C5 PFNA	89		25 - 150
13C2 PFDA	91		25 - 150
13C2 PFUnA	90		25 - 150
13C2 PFDa	91		25 - 150
13C2 PFTeDA	92		25 - 150
13C3 PFBS	91		25 - 150
18O2 PFHxS	95		25 - 150

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QC Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-307651/2-A

Matrix: Water

Analysis Batch: 307900

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 307651

Isotope Dilution	LCS	LCS	
	%Recovery	Qualifier	Limits
13C4 PFOS	93		25 - 150
13C8 FOSA	77		25 - 150
d3-NMeFOSAA	78		25 - 150
d5-NEtFOSAA	82		25 - 150
M2-6:2 FTS	88		25 - 150
M2-8:2 FTS	73		25 - 150
13C3 HFPO-DA	80		25 - 150

Lab Sample ID: LCSD 320-307651/3-A

Matrix: Water

Analysis Batch: 307900

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 307651

Analyte	Spike Added	LCSD		Unit	D	%Rec	Limits	RPD	Limit
		Result	Qualifier						
Perfluorobutanoic acid (PFBA)	40.0	44.5		ng/L		111	70 - 130	3	30
Perfluoropentanoic acid (PPeA)	40.0	40.8		ng/L		102	66 - 126	5	30
Perfluorohexanoic acid (PFhxA)	40.0	41.8		ng/L		104	66 - 126	4	30
Perfluoroheptanoic acid (PFHpA)	40.0	43.7		ng/L		109	66 - 126	5	30
Perfluorooctanoic acid (PFOA)	40.0	44.2		ng/L		111	64 - 124	1	30
Perfluorononanoic acid (PFNA)	40.0	43.3		ng/L		108	68 - 128	4	30
Perfluorodecanoic acid (PFDA)	40.0	42.9		ng/L		107	69 - 129	3	30
Perfluoroundecanoic acid (PFUnA)	40.0	41.9		ng/L		105	60 - 120	3	30
Perfluorododecanoic acid (PFDa)	40.0	42.3		ng/L		106	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)	40.0	42.2		ng/L		105	72 - 132	0	30
Perfluorotetradecanoic acid (PFTeA)	40.0	41.2		ng/L		103	68 - 128	3	30
Perfluorobutanesulfonic acid (PFBS)	35.4	39.6		ng/L		112	73 - 133	3	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.5		ng/L		100	63 - 123	3	30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	42.7		ng/L		112	68 - 128	5	30
Perfluoroctanesulfonic acid (PFOS)	37.1	37.5		ng/L		101	67 - 127	4	30
Perfluorodecanesulfonic acid (PFDS)	38.6	41.1		ng/L		107	68 - 128	5	30
Perfluoroctanesulfonamide (FOSA)	40.0	47.9		ng/L		120	70 - 130	6	30
N-methylperfluorooctanesulfonic acid (NMeFOSAA)	40.0	40.3		ng/L		101	67 - 127	1	30
N-ethylperfluorooctanesulfonamide (NEtFOSAA)	40.0	41.2		ng/L		103	65 - 125	1	30
6:2 FTS	37.9	44.7		ng/L		118	66 - 126	8	30
8:2 FTS	38.3	41.6		ng/L		108	67 - 127	5	30
F-53B Major	37.3	38.1		ng/L		102	70 - 130	4	30
HFPO-DA (GenX)	40.0	51.3		ng/L		128	70 - 130	11	30
F-53B Minor	37.7	40.4		ng/L		107	70 - 130	4	30
DONA	37.7	42.2		ng/L		112	70 - 130	4	30

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QC Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	LCSD	LCSD	Limits
	%Recovery	Qualifier	
13C4 PFBA	91		25 - 150
13C5-PFPeA DNU	96		25 - 150
13C2 PFHxA	96		25 - 150
13C4 PFHpA	98		25 - 150
13C4 PFOA	96		25 - 150
13C5 PFNA	93		25 - 150
13C2 PFDA	95		25 - 150
13C2 PFUnA	92		25 - 150
13C2 PFDoA	96		25 - 150
13C2 PFTeDA	95		25 - 150
13C3 PFBS	93		25 - 150
18O2 PFHxS	97		25 - 150
13C4 PFOS	93		25 - 150
13C8 FOSA	76		25 - 150
d3-NMeFOSAA	80		25 - 150
d5-NEtFOSAA	87		25 - 150
M2-6:2 FTS	88		25 - 150
M2-8:2 FTS	82		25 - 150
13C3 HFPO-DA	72		25 - 150

Lab Sample ID: MB 320-308297/1-A

Matrix: Solid

Analysis Batch: 308908

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 308297

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.20		0.028	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluoropentanoic acid (PFPeA)	ND		0.20		0.077	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluorohexanoic acid (PFHxA)	ND		0.20		0.042	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluoroheptanoic acid (PFHpA)	ND		0.20		0.029	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluoroctanoic acid (PFOA)	ND		0.20		0.086	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluorononanoic acid (PFNA)	ND		0.20		0.036	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluorodecanoic acid (PFDA)	ND		0.20		0.022	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluoroundecanoic acid (PFUnA)	ND		0.20		0.036	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluorododecanoic acid (PFDoA)	ND		0.20		0.067	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluorotridecanoic acid (PFTriA)	ND		0.20		0.051	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20		0.054	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20		0.025	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20		0.031	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		0.20		0.035	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluoroctanesulfonic acid (PFOS)	ND		0.50		0.20	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluorodecanesulfonic acid (PFDS)	ND		0.20		0.039	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
Perfluorooctanesulfonamide (FOSA)	ND		0.20		0.082	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0		0.39	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0		0.37	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
6:2 FTS	ND		2.0		0.15	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
8:2 FTS	ND		2.0		0.25	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
F-53B Major	ND		0.20		0.027	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
HFPO-DA (GenX)	ND		0.25		0.11	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
F-53B Minor	ND		0.20		0.022	ug/Kg		07/17/19 12:03	07/19/19 14:24		1
DONA	ND		0.20		0.018	ug/Kg		07/17/19 12:03	07/19/19 14:24		1

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QC Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA		89	89		25 - 150	07/17/19 12:03	07/19/19 14:24	1
13C5-PFPeA DNU		86			25 - 150	07/17/19 12:03	07/19/19 14:24	1
13C2 PFHxA		89			25 - 150	07/17/19 12:03	07/19/19 14:24	1
13C4 PFHpA		104			25 - 150	07/17/19 12:03	07/19/19 14:24	1
13C4 PFOA		93			25 - 150	07/17/19 12:03	07/19/19 14:24	1
13C5 PFNA		99			25 - 150	07/17/19 12:03	07/19/19 14:24	1
13C2 PFDA		91			25 - 150	07/17/19 12:03	07/19/19 14:24	1
13C2 PFUnA		89			25 - 150	07/17/19 12:03	07/19/19 14:24	1
13C2 PFDoA		90			25 - 150	07/17/19 12:03	07/19/19 14:24	1
13C2 PFTeDA		103			25 - 150	07/17/19 12:03	07/19/19 14:24	1
13C3 PFBS		89			25 - 150	07/17/19 12:03	07/19/19 14:24	1
18O2 PFHxS		91			25 - 150	07/17/19 12:03	07/19/19 14:24	1
13C4 PFOS		86			25 - 150	07/17/19 12:03	07/19/19 14:24	1
13C8 FOSA		79			25 - 150	07/17/19 12:03	07/19/19 14:24	1
d3-NMeFOSAA		77			25 - 150	07/17/19 12:03	07/19/19 14:24	1
d5-NEtFOSAA		74			25 - 150	07/17/19 12:03	07/19/19 14:24	1
M2-6:2 FTS		113			25 - 150	07/17/19 12:03	07/19/19 14:24	1
M2-8:2 FTS		102			25 - 150	07/17/19 12:03	07/19/19 14:24	1
13C3 HFPO-DA		115			25 - 150	07/17/19 12:03	07/19/19 14:24	1

Lab Sample ID: LCS 320-308297/2-A

Matrix: Solid

Analysis Batch: 308908

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 308297

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
Perfluorobutanoic acid (PFBA)	2.00	2.03		ug/Kg		102	81 - 133	
Perfluoropentanoic acid (PFPeA)	2.00	1.91		ug/Kg		95	79 - 120	
Perfluorohexanoic acid (PFHxA)	2.00	1.85		ug/Kg		93	75 - 125	
Perfluoroheptanoic acid (PFHpA)	2.00	1.84		ug/Kg		92	76 - 124	
Perfluorooctanoic acid (PFOA)	2.00	1.86		ug/Kg		93	76 - 121	
Perfluorononanoic acid (PFNA)	2.00	1.88		ug/Kg		94	74 - 126	
Perfluorodecanoic acid (PFDA)	2.00	1.89		ug/Kg		95	74 - 124	
Perfluoroundecanoic acid (PFUnA)	2.00	1.83		ug/Kg		92	74 - 114	
Perfluorododecanoic acid (PFDoA)	2.00	1.85		ug/Kg		93	75 - 123	
Perfluorotridecanoic acid (PFTriA)	2.00	1.96		ug/Kg		98	43 - 116	
Perfluorotetradecanoic acid (PFTeA)	2.00	1.87		ug/Kg		93	22 - 129	
Perfluorobutanesulfonic acid (PFBS)	1.77	1.67		ug/Kg		94	73 - 142	
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.67		ug/Kg		92	75 - 121	
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	1.92		ug/Kg		101	78 - 146	
Perfluoroctanesulfonic acid (PFOS)	1.86	1.77		ug/Kg		95	69 - 131	
Perfluorodecanesulfonic acid (PFDS)	1.93	1.78		ug/Kg		92	54 - 113	
Perfluoroctanesulfonamide (FOSA)	2.00	2.17		ug/Kg		109	62 - 135	
N-methylperfluoroctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.99 J		ug/Kg		100	65 - 135	

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-308297/2-A			Client Sample ID: Lab Control Sample					
Matrix: Solid			Prep Type: Total/NA					
Analysis Batch: 308908			Prep Batch: 308297					
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.94	J	ug/Kg	97	65 - 135		
6:2 FTS		1.90	J	ug/Kg	89	65 - 135		
8:2 FTS		1.92	2.00	ug/Kg	105	65 - 135		
F-53B Major		1.86	1.85	ug/Kg	99	70 - 130		
HFPO-DA (GenX)		2.00	1.74	ug/Kg	87	70 - 130		
F-53B Minor		1.88	1.95	ug/Kg	104	70 - 130		
DONA		1.88	1.97	ug/Kg	105	70 - 130		
Isotope Dilution	%Recovery	LCS Qualifier	LCS	Limits				
13C4 PFBA	82		25 - 150					
13C5-PFPeA DNU	78		25 - 150					
13C2 PFHxA	83		25 - 150					
13C4 PFHpA	90		25 - 150					
13C4 PFOA	85		25 - 150					
13C5 PFNA	86		25 - 150					
13C2 PFDA	82		25 - 150					
13C2 PFUnA	83		25 - 150					
13C2 PFDoA	82		25 - 150					
13C2 PFTeDA	90		25 - 150					
13C3 PFBS	81		25 - 150					
18O2 PFHxS	80		25 - 150					
13C4 PFOS	79		25 - 150					
13C8 FOSA	67		25 - 150					
d3-NMeFOSAA	68		25 - 150					
d5-NEtFOSAA	69		25 - 150					
M2-6:2 FTS	106		25 - 150					
M2-8:2 FTS	89		25 - 150					
13C3 HFPO-DA	93		25 - 150					

Method: D 2216 - Percent Moisture

Lab Sample ID: 320-52224-13 DU			Client Sample ID: PFAS-SS-10					
Matrix: Solid			Prep Type: Total/NA					
Analysis Batch: 307931								
Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	9.0		7.8		%		15	20
Percent Solids	91.0		92.2		%		1	20

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

LCMS

Prep Batch: 307651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-52224-1	MW-4-A	Total/NA	Water	3535	1
320-52224-2	MW-14-A	Total/NA	Water	3535	2
320-52224-3 - DL	MW-88-5-WT	Total/NA	Water	3535	3
320-52224-3	MW-88-5-WT	Total/NA	Water	3535	4
320-52224-4 - DL	Effluent	Total/NA	Water	3535	5
320-52224-4	Effluent	Total/NA	Water	3535	6
320-52224-5 - DL	22-D	Total/NA	Water	3535	7
320-52224-5	22-D	Total/NA	Water	3535	8
320-52224-6 - DL	Influent	Total/NA	Water	3535	9
320-52224-6	Influent	Total/NA	Water	3535	10
320-52224-7 - DL	MW-17-A	Total/NA	Water	3535	11
320-52224-7 - DL2	MW-17-A	Total/NA	Water	3535	12
320-52224-7	MW-17-A	Total/NA	Water	3535	13
320-52224-8	EB-2	Total/NA	Water	3535	14
320-52224-9	FB-2	Total/NA	Water	3535	15
320-52224-10	EB-3	Total/NA	Water	3535	
320-52224-11 - DL	MW-4-B	Total/NA	Water	3535	
320-52224-11	MW-4-B	Total/NA	Water	3535	
MB 320-307651/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-307651/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-307651/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 307900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-52224-1	MW-4-A	Total/NA	Water	537 (modified)	307651
320-52224-2	MW-14-A	Total/NA	Water	537 (modified)	307651
320-52224-3	MW-88-5-WT	Total/NA	Water	537 (modified)	307651
320-52224-4	Effluent	Total/NA	Water	537 (modified)	307651
320-52224-5	22-D	Total/NA	Water	537 (modified)	307651
320-52224-6	Influent	Total/NA	Water	537 (modified)	307651
320-52224-7	MW-17-A	Total/NA	Water	537 (modified)	307651
320-52224-9	FB-2	Total/NA	Water	537 (modified)	307651
320-52224-10	EB-3	Total/NA	Water	537 (modified)	307651
320-52224-11	MW-4-B	Total/NA	Water	537 (modified)	307651
MB 320-307651/1-A	Method Blank	Total/NA	Water	537 (modified)	307651
LCS 320-307651/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	307651
LCSD 320-307651/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	307651

Prep Batch: 308297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-52224-12	PFAS-SS-01	Total/NA	Solid	SHAKE	
320-52224-13	PFAS-SS-10	Total/NA	Solid	SHAKE	
320-52224-14	PFAS-SS-04	Total/NA	Solid	SHAKE	
320-52224-15	PFAS-SS-02	Total/NA	Solid	SHAKE	
320-52224-16	PFAS-SS-03	Total/NA	Solid	SHAKE	
MB 320-308297/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-308297/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Analysis Batch: 308908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-52224-12	PFAS-SS-01	Total/NA	Solid	537 (modified)	308297

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

LCMS (Continued)

Analysis Batch: 308908 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-52224-13	PFAS-SS-10	Total/NA	Solid	537 (modified)	308297
320-52224-14	PFAS-SS-04	Total/NA	Solid	537 (modified)	308297
320-52224-16	PFAS-SS-03	Total/NA	Solid	537 (modified)	308297
MB 320-308297/1-A	Method Blank	Total/NA	Solid	537 (modified)	308297
LCS 320-308297/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	308297

Analysis Batch: 308927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-52224-3 - DL	MW-88-5-WT	Total/NA	Water	537 (modified)	307651
320-52224-4 - DL	Effluent	Total/NA	Water	537 (modified)	307651
320-52224-5 - DL	22-D	Total/NA	Water	537 (modified)	307651
320-52224-6 - DL	Influent	Total/NA	Water	537 (modified)	307651
320-52224-7 - DL	MW-17-A	Total/NA	Water	537 (modified)	307651
320-52224-8	EB-2	Total/NA	Water	537 (modified)	307651
320-52224-11 - DL	MW-4-B	Total/NA	Water	537 (modified)	307651

Analysis Batch: 309708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-52224-15	PFAS-SS-02	Total/NA	Solid	537 (modified)	308297

Analysis Batch: 315066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-52224-7 - DL2	MW-17-A	Total/NA	Water	537 (modified)	307651

General Chemistry

Analysis Batch: 307931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-52224-13	PFAS-SS-10	Total/NA	Solid	D 2216	
320-52224-13 DU	PFAS-SS-10	Total/NA	Solid	D 2216	

Analysis Batch: 308062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-52224-12	PFAS-SS-01	Total/NA	Solid	D 2216	
320-52224-14	PFAS-SS-04	Total/NA	Solid	D 2216	
320-52224-15	PFAS-SS-02	Total/NA	Solid	D 2216	
320-52224-16	PFAS-SS-03	Total/NA	Solid	D 2216	

Lab Chronicle

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: MW-4-A
Date Collected: 07/11/19 09:53
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.7 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)		1			307900	07/16/19 05:01	P1N	TAL SAC

Client Sample ID: MW-14-A
Date Collected: 07/11/19 00:00
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			251.3 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)		1			307900	07/16/19 05:09	P1N	TAL SAC

Client Sample ID: MW-88-5-WT
Date Collected: 07/11/19 11:15
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535	DL		275.5 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			308927	07/19/19 21:36	S1M	TAL SAC
Total/NA	Prep	3535			275.5 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)		1			307900	07/16/19 05:17	P1N	TAL SAC

Client Sample ID: Effluent
Date Collected: 07/11/19 11:55
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535	DL		265.7 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			308927	07/19/19 21:44	S1M	TAL SAC
Total/NA	Prep	3535			265.7 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)		1			307900	07/16/19 05:25	P1N	TAL SAC

Client Sample ID: 22-D
Date Collected: 07/11/19 12:15
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535	DL		267.1 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			308927	07/19/19 21:52	S1M	TAL SAC
Total/NA	Prep	3535			267.1 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)		1			307900	07/16/19 05:33	P1N	TAL SAC

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Lab Chronicle

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: Influent
Date Collected: 07/11/19 12:30
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535	DL		253.6 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			308927	07/19/19 22:00	S1M	TAL SAC
Total/NA	Prep	3535			253.6 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)		1			307900	07/16/19 05:57	P1N	TAL SAC

Client Sample ID: MW-17-A
Date Collected: 07/11/19 13:49
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535	DL		271.4 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			308927	07/19/19 22:08	S1M	TAL SAC
Total/NA	Prep	3535	DL2		271.4 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)	DL2	50			315066	08/14/19 12:30	S1M	TAL SAC
Total/NA	Prep	3535			271.4 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)		1			307900	07/16/19 06:05	P1N	TAL SAC

Client Sample ID: EB-2
Date Collected: 07/11/19 14:00
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			265 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)		1			308927	07/19/19 21:28	S1M	TAL SAC

Client Sample ID: FB-2
Date Collected: 07/11/19 14:02
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			282.8 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)		1			307900	07/16/19 06:21	P1N	TAL SAC

Client Sample ID: EB-3
Date Collected: 07/11/19 14:05
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			281.2 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)		1			307900	07/16/19 06:29	P1N	TAL SAC

Eurofins TestAmerica, Sacramento

Lab Chronicle

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: MW-4-B
Date Collected: 07/11/19 16:11
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535	DL		264.2 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			308927	07/19/19 22:16	S1M	TAL SAC
Total/NA	Prep	3535			264.2 mL	10.0 mL	307651	07/15/19 05:24	MTN	TAL SAC
Total/NA	Analysis	537 (modified)		1			307900	07/16/19 06:37	P1N	TAL SAC

Client Sample ID: PFAS-SS-01
Date Collected: 07/11/19 09:33
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			308062	07/16/19 17:18	TCS	TAL SAC

Client Sample ID: PFAS-SS-01
Date Collected: 07/11/19 09:33
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-12
Matrix: Solid
Percent Solids: 92.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			4.94 g	10.00 mL	308297	07/17/19 12:03	MC	TAL SAC
Total/NA	Analysis	537 (modified)		1			308908	07/19/19 15:12	D1R	TAL SAC

Client Sample ID: PFAS-SS-10
Date Collected: 07/11/19 00:00
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			307931	07/15/19 19:11	SAD	TAL SAC

Client Sample ID: PFAS-SS-10
Date Collected: 07/11/19 00:00
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-13
Matrix: Solid
Percent Solids: 91.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.10 g	10.00 mL	308297	07/17/19 12:03	MC	TAL SAC
Total/NA	Analysis	537 (modified)		1			308908	07/19/19 15:20	D1R	TAL SAC

Client Sample ID: PFAS-SS-04
Date Collected: 07/11/19 10:58
Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-14
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			308062	07/16/19 17:18	TCS	TAL SAC

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Lab Chronicle

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Client Sample ID: PFAS-SS-04

Date Collected: 07/11/19 10:58

Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-14

Matrix: Solid

Percent Solids: 92.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			4.96 g	10.00 mL	308297	07/17/19 12:03	MC	TAL SAC
Total/NA	Analysis	537 (modified)		1			308908	07/19/19 15:28	D1R	TAL SAC

Client Sample ID: PFAS-SS-02

Date Collected: 07/11/19 13:15

Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-15

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			308062	07/16/19 17:18	TCS	TAL SAC

Client Sample ID: PFAS-SS-02

Date Collected: 07/11/19 13:15

Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-15

Matrix: Solid

Percent Solids: 88.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			4.98 g	10.00 mL	308297	07/17/19 12:03	MC	TAL SAC
Total/NA	Analysis	537 (modified)		1			309708	07/23/19 16:56	S1M	TAL SAC

Client Sample ID: PFAS-SS-03

Date Collected: 07/11/19 15:45

Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-16

Matrix: Solid

Percent Solids: 88.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			308062	07/16/19 17:18	TCS	TAL SAC

Client Sample ID: PFAS-SS-03

Date Collected: 07/11/19 15:45

Date Received: 07/12/19 09:25

Lab Sample ID: 320-52224-16

Matrix: Solid

Percent Solids: 88.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			4.97 g	10.00 mL	308297	07/17/19 12:03	MC	TAL SAC
Total/NA	Analysis	537 (modified)		1			308908	07/19/19 16:00	D1R	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Eurofins TestAmerica, Sacramento

Accreditation/Certification Summary

Client: Leppert Associates Inc

Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Oregon	NELAP	10	4040	01-29-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
537 (modified)	3535	Water	DONA
537 (modified)	3535	Water	F-53B Major
537 (modified)	3535	Water	F-53B Minor
537 (modified)	3535	Water	HFPO-DA (GenX)
537 (modified)	SHAKE	Solid	DONA
537 (modified)	SHAKE	Solid	F-53B Major
537 (modified)	SHAKE	Solid	F-53B Minor
537 (modified)	SHAKE	Solid	HFPO-DA (GenX)

Method Summary

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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Sample Summary

Client: Leppert Associates Inc
Project/Site: PFAS, NJ Soil and GW

Job ID: 320-52224-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-52224-1	MW-4-A	Water	07/11/19 09:53	07/12/19 09:25	
320-52224-2	MW-14-A	Water	07/11/19 00:00	07/12/19 09:25	
320-52224-3	MW-88-5-WT	Water	07/11/19 11:15	07/12/19 09:25	
320-52224-4	Effluent	Water	07/11/19 11:55	07/12/19 09:25	
320-52224-5	22-D	Water	07/11/19 12:15	07/12/19 09:25	
320-52224-6	Influent	Water	07/11/19 12:30	07/12/19 09:25	
320-52224-7	MW-17-A	Water	07/11/19 13:49	07/12/19 09:25	
320-52224-8	EB-2	Water	07/11/19 14:00	07/12/19 09:25	
320-52224-9	FB-2	Water	07/11/19 14:02	07/12/19 09:25	
320-52224-10	EB-3	Water	07/11/19 14:05	07/12/19 09:25	
320-52224-11	MW-4-B	Water	07/11/19 16:11	07/12/19 09:25	
320-52224-12	PFAS-SS-01	Solid	07/11/19 09:33	07/12/19 09:25	
320-52224-13	PFAS-SS-10	Solid	07/11/19 00:00	07/12/19 09:25	
320-52224-14	PFAS-SS-04	Solid	07/11/19 10:58	07/12/19 09:25	
320-52224-15	PFAS-SS-02	Solid	07/11/19 13:15	07/12/19 09:25	
320-52224-16	PFAS-SS-03	Solid	07/11/19 15:45	07/12/19 09:25	

Chain of Custody Record

Client Information		Sampler: <i>D. Alltucker</i>	Lab P.M. David Alltucker	Carrier Tracking No(s): COC No 320-27572-6472.1
Client Contact Teresa Van	Phone:	E-Mail:		Page 1 of 2
Company Leppert Associates Inc	Address: 1422 Washington Ave	Due Date Requested: TAT Requested (days):	Analysis Requested	
City Golden	State, Zip CO, 80401	PO #		
Phone	Email: <i>Ivan@leppertassociates.com</i>	WO #:		
Project Name:	Project #:	SSOW#:		
Site:				
Sample Identification				
	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, B=tissue, A=air)
				Preservation Code: <input checked="" type="checkbox"/> N
<i>MW-4-A</i>	7-11-19	0953	C	Water <input checked="" type="checkbox"/>
<i>MW-14-A</i>	7-11-19	0	C	Water <input checked="" type="checkbox"/>
<i>MW-8P-5-WT</i>	7-11-19	1155	C	Water <input checked="" type="checkbox"/>
<i>Effluent</i>	7-11-19	1155	C	Water <input checked="" type="checkbox"/>
<i>32-D</i>	7-11-19	1215	C	Water <input checked="" type="checkbox"/>
<i>Influent</i>	7-11-19	1230	C	Water <input checked="" type="checkbox"/>
<i>MW-17-A</i>	7-11-19	1349	C	Water <input checked="" type="checkbox"/>
<i>EB-2</i>	7-11-19	1400	C	Water <input checked="" type="checkbox"/>
<i>FB-2</i>	7-11-19	1402	C	Water <input checked="" type="checkbox"/>
<i>EB-3</i>	7-11-19	1405	C	Water <input checked="" type="checkbox"/>
<i>MW-4-B</i>	7-11-19	1611	C	Water <input checked="" type="checkbox"/>
<input type="checkbox"/> Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison A <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological				
<input type="checkbox"/> Deliverable Requested I, II, III, IV, Other (specify)				
<input type="checkbox"/> Empty Kit Reinquished by <i>John Hall</i> Date/Time: <i>7-11-19</i> Company: <i>JH</i> Received By: <i>ET</i>				
<input type="checkbox"/> Custody Seals intact: Yes <input checked="" type="checkbox"/> No Custody Seal No.: <i>603707</i>				
<input type="checkbox"/> Sample Disposal / A fee may be assessed if samples are retained longer than 1 month <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months				
<input type="checkbox"/> Special Instructions/QC Requirements:				
<input type="checkbox"/> Method of Shipment:				
<input type="checkbox"/> Relinquished by <i>John Hall</i> Date/Time: <i>7-11-19</i> Company: <i>JH</i> Received By: <i>ET</i>				
<input type="checkbox"/> Relinquished by <i>John Hall</i> Date/Time: <i>7-11-19</i> Company: <i>JH</i> Received By: <i>ET</i>				
<input type="checkbox"/> Relinquished by <i>John Hall</i> Date/Time: <i>7-11-19</i> Company: <i>JH</i> Received By: <i>ET</i>				
<input type="checkbox"/> Cooler Temperature(s) °C and Other Remarks: <i>4.6</i>				

Ver. 01/16/2019
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Login Sample Receipt Checklist

Client: Leppert Associates Inc

Job Number: 320-52224-1

Login Number: 52224

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Thompson, Sarah W

Question	Answer	Comment	
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True		1
The cooler's custody seal, if present, is intact.	True	603807	2
Sample custody seals, if present, are intact.	N/A		3
The cooler or samples do not appear to have been compromised or tampered with.	True		4
Samples were received on ice.	True		5
Cooler Temperature is acceptable.	True		6
Cooler Temperature is recorded.	True		7
COC is present.	True		8
COC is filled out in ink and legible.	True		9
COC is filled out with all pertinent information.	True		10
Is the Field Sampler's name present on COC?	True		11
There are no discrepancies between the containers received and the COC.	True		12
Samples are received within Holding Time (excluding tests with immediate HTs)	True		13
Sample containers have legible labels.	True		14
Containers are not broken or leaking.	True		15
Sample collection date/times are provided.	True		
Appropriate sample containers are used.	True		
Sample bottles are completely filled.	True		
Sample Preservation Verified.	N/A		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True		
Multiphasic samples are not present.	True		
Samples do not require splitting or compositing.	True		
Residual Chlorine Checked.	N/A		

Appendix B:

Data Validation for PFAS Screening Event, Clean Harbors Bridgeport, LLC

This is the data validation process that was applied to the samples obtained during the PFAS screening sampling event that was conducted at Clean Harbors Bridgeport. The groundwater and soil samples were collected on July 11, 2019. Data validation is a standardized process for judging the analytical quality and usefulness of a discrete set of chemical data. The data validation process that was applied to the data was a tier 1 data validation. The validation process focuses on evaluating the analytical laboratory's performance with the data that is presented. A full description of the data validation process can be found in the Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses (USEPA, 1996) with updates that can be found in Region 1 – EPA New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures (USEPA ,2018).

Per fluorinated compounds (PFCs) are emerging chemicals of concern that have been recently addressed by the USEPA and NJDEP. This means that there are many PFC constituents that currently are not regulated by concentrations standards. The PFCs that have been identified for remediation standards are: PFOS, PFAS, and PFNA. These compounds have remediation standards that were issued by NJDEP in March 2019. These standards are still being addressed and reviewed and may change. This data validation was conducted in September 2019.

The validation process includes checking the electronic data deliverables (EDDs) and the laboratory reports for any exceedences, notes and errors. Each data set is individually checked, and footnotes are added to the electronic data to show the results of the validation. The analysis process that was conducted for these samples was modified USEPA Method 537. This process is outlined in *Method 537 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)* (USEPA 2009). This is a document that is applied by the USEPA and outlines how the process works and what needs to be done to make sure that the process is conducted correctly. This document was used as a guide to check the validity of the data by making sure the lab ran the procedure correctly. The document also has applied standards that are used to check the data against. This data validation was performed in the attached Excel file which was used to make the checks and filter out the needed data. The analytes of the PFAS samples were analyzed but as these do not have standards from the USEPA, they are used as checks to make sure that the data has not been corrupted. The process of the data validation steps is outlined below.

- **Condition of Samples**
 - The first part of the data validation was to make sure that the lab received the samples in proper condition and that they were correctly handled. The lab noted that the samples were received on time and in the proper condition to run the method.
 - The only issue that was noted was with sample Field Blank 2. The label stated that the sample was collected at 14:02 while the Chain-of-Custody (COC) stated that the sample was obtained at 14:03.
- **Holding Time**
 - This is a check of the holding times of the samples. This is the time period from when samples are collected, then upon receipt by the lab, are prepared for analysis (extraction time) and then analyzed. Holding times are established as the maximum time period to conduct extraction and analyses before the sample begins to degrade.
 - The holding time specifications are reported in the modified Method 537 outline provided by the USEPA. The water samples must be extracted within 14 days after collection and analyzed within 28 days after extraction.
 - There were two errors noted for holding times. These were found in the groundwater samples obtained from well 17-a and analyzed for Perfluorooctanoic acid (PFOA) and its analyte, 13C4 PFOA. The constituent PFOA was analyzed 30 days after being prepared, exceeding the limit of 28 days. This analysis was conducted on a second dilution, which means that the sample was diluted and extracted and analyzed twice. The first analyses date was conducted within holding times; however, the date for the analyses of PFOA on the second dilution exceeded the holding time by 2 days. As the concentration of PFOA in well 17-a was 6,700 nanograms per liter (ng/L) for the final analyses, over the concentration limit of 10 ng/L, this missed holding time did not affect the quality of the data reported.
- **Laboratory Control Samples**
 - Surrogate recovery should be within the laboratory established control limits. Any recovery outside of the limits is flagged. There were no laboratory control samples that were outside the percent recovery range.
- **Method Blanks**
 - All samples were checked against the detections in the method blank. Any parameter detected in the method blank and in other samples is flagged. These are flagged with a B.
 - PFHxS was detected in the method blank. It is detected at 0.267 ng/L which is above the MDL of 0.17 ng/L and less than the reporting limit of 2.0 ng/L. This constituent was flagged in all the water samples.

- Since an analyte was detected in the method blank, a 3x and 10x rule was applied to the results of the analyte in the samples.
 - 3x rule is applied as follows: If the concentration is less than or equal to three times the concentration of that compound in the method blank, then it is unlikely that the compound is present in the sample.
 - 10x rule is applied as follows: If the concentration is more than 3x but less than 10x the concentration of the blank, then the presence of the compound in the site sample is considered real. But if the concentration is greater than 10x, the concentration is considered negligible.
 - These checks were performed. All of the results for PFHxS fell out of this range and indicates that the results for PFHxS could not be trusted as real results.
- **Reporting Limits**
 - The samples are checked to confirm that the reporting limit is less than the method detection limit for each analyte in each sample. Any discrepancies are flagged.
 - Flag any reported concentration that is less than the reporting limit.
 - There were no reporting limits that were less than the method detection limit.
 - There were many results that were above the MDL but less than the RL, these are results that are J flagged in the attached Excel file.
 - **Sample Duplicate Evaluation**
 - The field duplicates reported percent differences cannot exceed 30 percent. This calculation is provided in the method report.
 - The report was flagged for these errors.
 - None of these errors occurred.
 - **Reruns**
 - Analytes that were re-run by the laboratory are flagged. The laboratory was required to dilute the samples. The samples were re-analyzed at the dilution.
 - This holds true for all the reruns as they were rerun at a dilution.
 - **Recovery Limits and Matrix Spikes**
 - Analytes that were returned outside of the percent isotope dilution recovery limit stated from the procedure need to be flagged.
 - The lab flagged these; the isotopes flagged were: M2-6:2FTS and M2-8:2FTS for MW-4-B, and M2-6:2FTS for soil samples SS-01, SS-10 and SS-02.
 - The matrix spike percent recovery needs to be within the lab reported range and any outside of the range needs to be flagged.
 - There were no percent recoveries outside of their supplied ranges.

- **Data Completeness**
 - All the data has been reported and there are no gaps in the data, indicating the data is complete.

- **Overall Assessment of Data**

PFAS is a new and emerging contaminant that is at the forefront of environmental remediation. Since PFAS is a newly studied chemical, its testing processes are also new. The method used to test for PFCs in groundwater and soil is the modified USEPA Method 537 which is a newly defined process. Method 537 is a delicate procedure that requires the samples to be handled with care. Eurofins TestAmerica West Sacramento, the lab which received and analyzed the samples, took care to check that the samples were handled well and that the data was analyzed according to the procedure. Despite the lab following the method procedures, there were some small areas of concern, which upon review of the data validation process, were found to not have an impact on the usable data.

References:

USEPA, 1996. *Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses*, United States Environmental Protection Agency, July 1996. Available at <http://www.epa.gov/ne/oeme/>

USEPA, 2009. *Method 537. Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)*, National Exposure Research Laboratory Office of Research and Development United States Environmental Protection Agency, Cincinnati, Ohio 45268. September 2009. Available at file:///C:/Users/Robert/Downloads/METHOD%20537_FINAL_REV1.1.PDF

USEPA, 2018. *Region 1 – EPA New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures*, United States Environmental Protection Agency, June 2018. Available at <https://www.epa.gov/sites/production/files/2018-06/documents/r1-dr-supplement-june-2018.pdf>

Appendix B:

Data Validation Spreadsheet

PFAS Screening Event – July 2019, Clean Harbors Bridgeport, LLC

Note: All analysis conducted by Eurofins Test America, Sacramento, Laboratory Job ID: 320-52224-1

Lot ID	Sample Number	Aliquot	Client ID	Date Collected	Date Received	Date Prepped	Date Analyzed	Method	Component	CAS	Matrix	Result	Spiked	Footnotes	Units	RL	MDL	QCLot	QCRun	Dilution	% Water	Extraction Time (days)	Analyzed Time (days)	Flag for Recovery	Flagged if detected in the method blank	Is the detect considered real	RL > MDL flag	Result < RL flag	Result < MDL
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C2 PFDA	STL00996	SOLID	107		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C2 PFDoA	STL00998	SOLID	65		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C2 PFHxA	STL00993	SOLID	95		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C2 PFTeDA	STL02116	SOLID	77		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C2 PFUnA	STL00997	SOLID	95		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C3 HFPO-DA	STL02255	SOLID	90		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C3 PFBS	STL02337	SOLID	93		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C4 PFBA	STL00992	SOLID	82		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C4 PFHpA	STL01892	SOLID	100		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C4 PFOA	STL00990	SOLID	98		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C4 PFOS	STL00991	SOLID	92		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C5 PFNA	STL00995	SOLID	102		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C5-PFPeA DNU	STL01893	SOLID	94		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	13C8 FOSA	STL01056	SOLID	82		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	18O2 PFHxS	STL00994	SOLID	93		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	6:2 FTS	27619972	SOLID	ND		ug/Kg	2.2	0.16	320-308908	320-308908	1	7.8	6	2					1	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	8:2 FTS	39108344	SOLID	ND		ug/Kg	2.2	0.27	320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	d3-NMeFOSAA	STL02118	SOLID	101		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	d5-NetFOSAA	STL02117	SOLID	77		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	DONA	919005144	SOLID	ND		ug/Kg	0.22	0.02	320-308908	320-308908	1	7.8	6	2					1	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	F-53B Major	756426581	SOLID	ND		ug/Kg	0.22	0.03	320-308908	320-308908	1	7.8	6	2					1	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	F-53B Minor	763051929	SOLID	ND		ug/Kg	0.22	0.024	320-308908	320-308908	1	7.8	6	2					1	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	HFPO-DA (GenX)	13252136	SOLID	0.28		ug/Kg	0.27	0.12	320-308908	320-308908	1	7.8	6	2					1	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	M2-6:2 FTS	STL02279	SOLID	158	*	%REC			320-308908	320-308908	1	7.8	6	2	1				0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	M2-8:2 FTS	STL02280	SOLID	136		%REC			320-308908	320-308908	1	7.8	6	2					0	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	2991506	SOLID	ND		ug/Kg	2.2	0.41	320-308908	320-308908	1	7.8	6	2					1	1	1
320-52224-1	12	SA	PFAS-SS-01	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2355319	SOLID	ND		ug/Kg	2.2	0.43	320-308												

Appendix B:

Data Validation Spreadsheet

PFAS Screening Event – July 2019, Clean Harbors Bridgeport, LLC

Note: All analysis conducted by Eurofins Test America, Sacramento, Laboratory Job ID: 320-52224-1

Lot ID	Sample Number	Aliquot	Client ID	Date Collected	Date Received	Date Prepped	Date Analyzed	Method	Component	CAS	Matrix	Result	Spiked	Footnotes	Units	RL	MDL	QCLot	QCRun	Dilution	% Water	Extraction Time (days)	Analyzed Time (days)	Flag for Recovery	Flagged if detected in the method blank	Is the detect considered real	RL > MDL flag	Result < RL flag	Result < MDL
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluorobutanesulfonic acid (PFBS)	375735	SOLID	ND			ug/kg	0.22	0.027	320-308908	320-308908	1	9	6	2				1	1	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluorobutanoic acid (PFBA)	375224	SOLID	0.053	J		ug/kg	0.22	0.03	320-308908	320-308908	1	9	6	2				1	0	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluorodecanesulfonic acid (PFDS)	335773	SOLID	ND			ug/kg	0.22	0.042	320-308908	320-308908	1	9	6	2				1	1	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluorodecanoic acid (PFDA)	335762	SOLID	ND			ug/kg	0.22	0.024	320-308908	320-308908	1	9	6	2				1	1	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluorododecanoic acid (PFDoA)	307551	SOLID	ND			ug/kg	0.22	0.072	320-308908	320-308908	1	9	6	2				1	1	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluoroheptanesulfonic Acid (PFHpS)	375928	SOLID	ND			ug/kg	0.22	0.038	320-308908	320-308908	1	9	6	2				1	1	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluoroheptanoic acid (PFHpA)	375859	SOLID	ND			ug/kg	0.22	0.031	320-308908	320-308908	1	9	6	2				1	1	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluorohexanesulfonic acid (PFHxS)	355464	SOLID	ND			ug/kg	0.22	0.033	320-308908	320-308908	1	9	6	2	B	0	1	1	1	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluorohexanoic acid (PFHxA)	307244	SOLID	ND			ug/kg	0.22	0.045	320-308908	320-308908	1	9	6	2				1	1	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluorononanoic acid (PFNA)	375951	SOLID	ND			ug/kg	0.22	0.039	320-308908	320-308908	1	9	6	2				1	1	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluooctanesulfonamide (FOSA)	754916	SOLID	ND			ug/kg	0.22	0.088	320-308908	320-308908	1	9	6	2				1	1	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluooctanesulfonic acid (PFOS)	1763231	SOLID	ND			ug/kg	0.54	0.22	320-308908	320-308908	1	9	6	2				1	1	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluooctanoic acid (PFOA)	335671	SOLID	0.21	J		ug/kg	0.22	0.093	320-308908	320-308908	1	9	6	2				1	0	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluoropentanoic acid (PPPeA)	2706903	SOLID	0.098	J		ug/kg	0.22	0.083	320-308908	320-308908	1	9	6	2				1	0	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluorotetradecanoic acid (PFTeA)	376067	SOLID	ND			ug/kg	0.22	0.058	320-308908	320-308908	1	9	6	2				1	1	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluorotridecanoic acid (PFTriA)	72629948	SOLID	ND			ug/kg	0.22	0.055	320-308908	320-308908	1	9	6	2				1	1	1
320-52224-1	13	SA	PFAS-SS-10	7/11/2019	7/12/2019	7/17/2019	7/19/2019	PFC_IDA	Perfluoroundecanoic acid (PFUnA)	2058948	SOLID	ND			ug/kg	0.22	0.039	320-308908	320-308908	1	9	6	2				1	1	1